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DEPARTMENT OF THE INTERIOR  
BUREAU OF EDUCATION  
IN COOPERATION WITH THE UNITED STATES FOOD ADMINISTRATION

# Lessons in Community and National Life

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SERIES A, FOR THE UPPER CLASSES OF  
THE HIGH SCHOOL

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PREPARED UNDER THE DIRECTION OF

CHARLES H. JUDD

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and

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# CONTENTS.

	Page.
Letter of the President . . . . .	5
Introduction . . . . .	7
 CHAPTER I.—SOCIAL ORGANIZATION AND THE EFFECTS OF THE WAR.	
Lesson A-1. Some fundamental aspects of social organization. Leon C. Marshall, dean of the school of commerce and adminis- tration, University of Chicago . . . . .	9
Lesson A-2. The western pioneer. Leverett S. Lyon, instructor in the University High School and the school of commerce and administration, University of Chicago . . . . .	19
Lesson A-3. The cooperation of specialists in modern society. Leverett S. Lyon . . . . .	27
 CHAPTER II.—PRODUCTION AND WISE CONSUMPTION.	
Lesson A-4. What nature has done for a typical city. J. Paul Goode, professor of geography, University of Chicago . . . . .	41
Lesson A-5. The human resources of a community. Ruth Ret- icker, of the school of commerce and administration, Univer- sity of Chicago . . . . .	51
Lesson A-6. Capital. Leon C. Marshall . . . . .	61
Lesson A-7. Organization. Leverett S. Lyon . . . . .	67
 CHAPTER III.—MACHINE INDUSTRY AND COMMUNITY LIFE.	
Lesson A-8. The rise of machine industry. Leverett S. Lyon . . . . .	73
Lesson A-9. Social control. Chester W. Wright, associate profes- sor of political economy, University of Chicago . . . . .	83
Lesson A-10. Indirect costs. Leon C. Marshall . . . . .	91
Lesson A-11. Education as encouraged by industry. Charles H. Judd, director of the school of education of the University of Chicago . . . . .	97
 CHAPTER IV.—NATIONAL CONTROL AND FOOD CONSERVATION.	
Lesson A-12. History of the Federal Departments. R. M. Tryon, assistant professor of the teaching of history, University of Chicago . . . . .	105
Lesson A-13. The United States food administration . . . . .	115
Lesson A-14. Substitute foods. Elizabeth W. Miller, instructor in home economics, University of Chicago . . . . .	123
Lesson A-15. Woman as the family purchaser. Hazel Kyrk, assistant professor of economics, Oberlin College . . . . .	131

## CHAPTER V.—CUSTOMS, LAWS, AND FORMS OF GOVERNMENT.

Lesson A-16. Caste in India. Mrs. L. E. Linzell, Columbus, Ohio.....	Page. 137
Lesson A-17. American mining law. George P. Costigan, jr., professor of law, Northwestern University.....	145
Lesson A-18. Local and National Governments.....	153
Lesson A-19. Active citizenship. Frederick D. Bramhill, instructor in political science, University of Chicago.....	161

## CHAPTER VI.—BUSINESS ORGANIZATION AND NATIONAL STANDARDS.

Lesson A-20. Private control of industry. Leverett S. Lyon...	169
Lesson A-21. Borrowing capital for modern business. H. G. Moulton, assistant professor of political economy, University of Chicago.....	179
Lesson A-22. The commercial bank and modern business. H. G. Moulton.....	187
Lesson A-23. The services of money. Leverett S. Lyon.....	193

## CHAPTER VII.—CONCENTRATION OF POPULATION, INDUSTRIES, AND INSTITUTIONS.

Lesson A-24. Concentration of population in great cities. Leverett S. Lyon.....	201
Lesson A-25. The integration of the greatest manufacturing concern in the United States. Chester W. Wright.....	209
Lesson A-26. Concentration of control in the railroad industry. John M. Clark, associate professor of political economy, University of Chicago.....	219
Lesson A-27. Concentration of social institutions. Charles H. Judd.....	225

## CHAPTER VIII.—THE WORKER AND THE WAGE SYSTEM.

Lesson A-28. The worker in our society. L. S. Lyon.....	233
Lesson A-29. The war labor administration. William B. Wilson, Secretary of Labor.....	249

THE WHITE HOUSE,

WASHINGTON,

*August 23, 1917.*

TO SCHOOL OFFICERS:

The war is bringing to the minds of our people a new appreciation of the problems of national life and a deeper understanding of the meaning and aims of democracy. Matters which heretofore have seemed commonplace and trivial are seen in a truer light. The urgent demand for the production and proper distribution of food and other national resources has made us aware of the close dependence of individual on individual and nation on nation. The effort to keep up social and industrial organizations in spite of the withdrawal of men for the Army has revealed the extent to which modern life has become complex and specialized.

These and other lessons of the war must be learned quickly if we are intelligently and successfully to defend our institutions. When the war is over we must apply the wisdom which we have acquired in purging and ennobling the life of the world.

In these vital tasks of acquiring a broader view of human possibilities the common school must have a large part. I urge that teachers and other school officers increase materially the time and attention devoted to instruction bearing directly on the problems of community and national life.

Such a plea is in no way foreign to the spirit of American public education or of existing practices. Nor is it a plea for a temporary enlargement of the school program appropriate merely to the period of the war. It is a plea for a realization in public education of the new emphasis which the war has given to the ideals of democracy and to the broader conceptions of national life.

In order that there may be definite material at hand with which the schools may at once expand their teaching I have asked Mr. Hoover and Commissioner Claxton to organize the proper agencies for the preparation and distribution of suitable lessons for the elementary grades and for the high-school classes. Lessons thus suggested will serve the double purpose of illustrating in a concrete way what can be undertaken in the schools and of stimulating teachers in all parts of the country to formulate new and appropriate materials drawn directly from the communities in which they live.

Sincerely, yours,

WOODROW WILSON.





## INTRODUCTION.

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The Lessons in Community and National Life are intended first of all to lay the foundations for an intelligent enthusiasm for the United States. Our schools have lacked that emphasis on nationalism which has been characteristic of European schools. Even our history courses have been meager and have for the most part treated of periods so remote that pupils in the schools have not cultivated a true idea of the unique characteristics of our national civilization. Though we have a continuous system of free education and a broad view regarding the training of girls, though we have universal franchise and freedom of organization, though our democracy has developed beyond that of any previous historical period, our pupils have been left without knowledge of the fact that these are unique possessions shared only in part by other progressive nations. The Lessons are accordingly filled with concrete descriptions of American institutions, and the significance of these institutions is made as clear as exposition and explanation can make it.

In the second place, the Lessons in Community and National Life aim to bring industry into the schools in a way which will appeal to the intelligence of pupils and will intellectualize all later contact with practical affairs. There is a very legitimate demand urged on the schools at this time that they prepare for industry. If the schools meet this demand only by furnishing the same kind of training in skill that industrial establishments might give, there will be little or no gain to society. If, on the other hand, the schools by appropriate recognition of industry as the expression of human genius and human cooperation can give pupils ideas as well as skill to guide them in later practical life, then the schools will have made a genuine and positive contribution to industrial training. The Lessons are accordingly filled with accounts of how industries originated and how they have evolved, so that the pupil may see that industry is a part of man's intellectual conquest of the world.

In the third place, the Lessons are intended to create a sense of personal responsibility, which can result only when the pupil is

shown how his life is interdependent with the life of other members of society. The child's first experiences with social life are those of a dependent and a consumer. There is little sense of responsibility until one begins to think of himself as obligated to consume wisely and to contribute to production. In these days when every individual in the Nation must conserve and when the responsibility for wise use of everything is a national duty, there are a unique demand and a unique opportunity to give pupils training in civic responsibility.

The method of securing these three ends is to present in the form of short sketches certain descriptions of the facts of national and community life. Each lesson is a unit intended to be read and studied by the pupil. The lesson is carefully prepared by a specialist and is filled with information which will reward the pupil for his reading. Each lesson is also part of a series in which the different lessons approach the same central theme from various angles. The lessons do not exhaust the theme which they illustrate. At the bottom of each page series of questions are set down in the hope of stimulating the pupils as well as the teachers to carry the methods of the Lessons further. Especially is it hoped that the Lessons will lead to studies of the local institutions which are around the school. A genuine study of community life must take up the familiar environment at the door of the schoolroom. The laboratory for these Lessons is in the home environment and the industrial environment of the pupil.

It is hoped that the Lessons will lead teachers and school officers to new efforts in the direction of a vital study of community life and that they will encourage publishers to bring together in available textbook form much material of a similar type.

The immediate purpose which gave rise to the Lessons should also be kept in view. The Nation has need of the help of every child within its borders. The food supply of the world is running low. Our Allies are in want. Our children must learn to save. It is believed that a free people can be appealed to effectively if the case is clearly laid before them. American children are not to be ordered to deprive themselves of familiar luxuries; they are to be told how urgent the need is. The lesson of civic responsibility, if learned in this rational way, will effect the saving that the Nation needs.

CHARLES H. JUDD.

# LESSONS IN COMMUNITY AND NATIONAL LIFE.

## SERIES A.

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### Chapter I.

## SOCIAL ORGANIZATION AND THE EFFECTS OF THE WAR.

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Lesson A-1 is intended to bring out in an introductory way the principles which underlie life in the modern world. Specialization, interdependence, and social control are all illustrated and shown to be essential factors in modern life. Success in the war demands not the organization of armies alone but the organization of the Nation. Every function of the social system must be intensified and directed to the single purpose to which all else is subordinate. Each man, each woman, and each child is called upon to do his utmost; and in order to do it intelligently and cheerfully he should understand how his part, insignificant though it may seem, fits into the whole scheme of national effort.

Lesson A-2 utilizes the experience of a western pioneer to show the contrast between the isolated life of a single individual, far from his fellow men, and life in complex modern society. The wants of the lone pioneer are comparatively simple, but he must supply them all by his own exertions. The necessary expenditure of labor is far greater and the satisfaction of living is far less than when many men divide their tasks, each doing his own special part.

Lesson A-3 describes the system of cooperation and mutual helpfulness which the experience of men has developed. The organization of business, the use of machinery, the application of science, and the authority of law are illustrated as essential features in modern social organization.

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### LESSON A-1. SOME FUNDAMENTAL ASPECTS OF SOCIAL ORGANIZATION.

By LEON C. MARSHALL,

*Dean of the School of Commerce and Administration, University of Chicago.*

We may learn many *Lessons in Community and National Life* from the great war now in progress. It has called our attention sharply to facts which were so common that most of us did not observe them at all and certainly did not recognize them as of tremendous importance. We see how easy it is to underestimate the importance of our everyday surroundings when we consider such a familiar thing as air. We realize, painfully, the importance of air when we are deprived of it or when there is a violent

gale. At other times, we take it for granted. This is equally true of many aspects of our community and national life. They are all around us but are never noticed in the humdrum happenings of times of peace. But if sudden changes come, or some of our surroundings are taken away, or if "it blows a gale of war," we are roughly shaken into the realization that these everyday aspects of our life are vital.

#### WAR IS A SOCIAL ENTERPRISE.

This present war has indeed blown a gale. It has been no story of quickly prepared armies marching out to occasional battles. Instead, it has involved the welding together for a long struggle to accomplish one purpose all the people and all the forces of every nation concerned; its men, women, and children, its transportation, its mining, its forestry, its agriculture, its manufactures, its schools, its churches—everybody and everything.

War is not made merely by men and rifles. It involves scientific research, giant machines drawn by traction engines, scientific calculation, careful organization, a continuous stream of equipment, food, and ammunition. It is all society working at one definite, visible task. When all of us—society—gave ourselves consciously to this task, we began to see many facts about how we live together to which we had formerly been blind. Let us look briefly at a few of the lessons this war has brought home to us. We shall study all these lessons in more detail later.

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Materials with which teachers and students may supplement these lessons will be found in the following books:

#### FOR OLDER PUPILS.

Henry Clay—Economics for the General Reader. Macmillan.  
 R. L. Ashley—The New Civics. Macmillan.  
 L. C. Marshall, C. W. Wright, and J. A. Field—Materials for the Study of Elementary Economics. University of Chicago Press.  
 Report of the Thirteenth Census of the United States. Especially for the lessons in this section: Classified Index to Occupations.

#### FOR INTERMEDIATE PUPILS.

A. W. Dunn—Community Civics. D. C. Heath & Co.  
 William L. Nida—City, State, and Nation. Macmillan.  
 Richman and Wallach—Good Citizenship. American Book Co.

#### FOR YOUNGER PUPILS.

Mabel Hill—Lessons for Junior Citizens. Ginn & Co.  
 Readers by Carpenter on various incidents, such as "How the World is Fed." American Book Co.

## THE COOPERATION OF SPECIALISTS.

When France sprang to arms in August, 1914, to repel the invader, she called to the colors four-fifths of all able-bodied workers between 19 and 45 years of age. This meant that the ordinary activities of France were greatly hindered. In whole districts mines, quarries, paper mills, iron works, spinning mills, and many business establishments either closed their doors or ran on a very light schedule. At first this did not greatly worry the responsible officials. Perhaps they thought that they could soon repulse the foe by means of their existing materials of war; that is, by using their existing stock of cannon, shells, rifles, ammunition, blankets, clothing, transport wagons, etc.; and that they could then return to the everyday tasks they had dropped.

Mars was not to be satisfied so easily and so quickly. It was to be a long war, and war is a greedy destroyer. France's stock of war materials was used up at a tremendous rate. More had to be produced and forwarded to the army. Who was to produce these things? The loyal youths, women, and old men of France were eager to help, but they did not know the trades and could not direct the operations. Until trained they could furnish only unskilled labor. And then the lesson was driven home that modern society is a collection of specialists working together.

France's specialists of all grades of importance had to be returned from the army to the supporting industries.

The specialists in steelwork were the first to be taken out of the trenches. Then chemists and workmen trained in the manufacture of explosives were recalled; electric engineers were sent back to the hydro-electric plants; miners were sent to the mines; paper makers and cardboard makers who could be employed in the preparation of explosives were taken out of the lines and put to work; cabinetmakers were put to

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1. Make as long a list as you can of significant forces which contribute to your daily life, but which you have been overlooking because they are so common.

2. What is the difference between the volunteer system and the way France obtains her soldiers? How do we get our soldiers?

3. What is meant by universal military service? What arguments can you present in favor of it? What against it?

4. Why should war be called a greedy destroyer? Does an army use up shoes and clothing more rapidly than the same number of men would in civil life?

5. Name as many things as you can which war uses in far greater quantities than peace.

manufacturing rifle stocks; wood cutters were brought back that there might be no waste in providing the enormous amount of wood needed in the army.

The experiences of France and other nations in making war goods have taught us in another striking way how true it is that we form a great cooperative society. Notice what an order for shells involves. It is not merely an order for steel and other commodities to be worked into shells. It involves machines to make them, machines to make those machines, railways to bring raw materials and carry finished products, coal for the factories and railways, railways to carry coal to the factories, factories to make the railway locomotives, and so on in an endless chain. An order for shells is an order for mines and railways, machines and freight cars, materials and human labor directed toward meeting one need. It is a vast cooperation of specialists. Almost everybody is a specialist to-day.

#### THE NECESSITY OF ECONOMY.

When the specialists of France were sent back from the army to the industries, they did not all go back to the identical tasks they had dropped when they were called to the colors. A readjustment was necessary.

In times of peace, our ordinary wants are supplied so smoothly that we fall into the belief that infinite quantities of every kind of goods anyone might desire can readily be produced. War quickly taught France—and the whole world—the fallacy of any such assumption. War demanded in staggering quantities many things used in peace time, such as food, blankets, and clothing; and it demanded equally great quantities of things not largely used in peace, such as guns, high explosives, and shells. France had only a given quantity of productive force available—only so much labor force, so many tools, machines, and factories. This

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6. Name 20 specialists in modern society. Is a farmer a specialist?

7. Do you know of any ways in which the schools are used to help us win the war?

8. Make a list of the things you can do in your own home and in school which will help win the war.

9. "When war comes industry must be readjusted." Why? What readjustments have you seen or heard of?

10. What does the word "society" mean? Does it have the same meaning as government?

11. Why is it that there is a scarcity of labor to-day?



productive force was not large enough to let her make all the things made in peace and at the same time meet the demands of war. The demands of war could not be denied if France was to live. She tried to meet them. This meant a scarcity of other things, and it could not be avoided.

The story of France in this matter is the story of all the other nations at war, and it reveals a homely truth applicable to times of peace as well as war. There are very few things which are as free as air. Productive energy must be expended to make things. Energy consumed in making one thing can not be used for making something else. There is only a limited amount of productive energy available at a given time. If we wish to apply large quantities of goods to some one or some dozen wants, we must economize, and apply a small quantity to other wants. No permanent relief comes even from increasing productive energy, for our wants increase very rapidly also. We, as a society, shall always have to economize. Some of us may have to economize more than others. Economy may be more important at one time than at another. The fact remains—we as a society shall always have to economize. We can not gratify all possible wants without limit.

#### PRICES AND PROFITS DIRECT PRODUCTIVE ENERGY.

The statement that we as a society shall always have to economize is true of a small community, of a large nation, and even of the peoples of the world as a whole. The war has demonstrated this. As soon as the war started, France and her allies, especially England, began to make use of another great feature of our life to-day, the interdependence of nations, and brought from other countries, particularly from the United States, great quantities of war materials. We had long been a peaceful nation, and our

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12. Explain in detail the difference between the ways France and the United States readjusted their industries. Which way accomplished the readjustment more quickly?

13. Suppose some one gave you \$2,000 to start a machine shop. Try to work out, in order, the steps you would take. Try to estimate the number of people who would be affected by your actions.

14. What things have you heard about that are now made on a large scale but were not made before the outbreak of the war?

15. Some war goods go from Chicago to London. Try to estimate how many people will help in the transfer.

business men were not, at the outset, making many of the things needed for war. As in France, a readjustment had to take place in our industries, but the readjustment was not brought about in the same way. In France, many of the workers were already soldiers, and the military authorities could assign them to the plants which were making war materials. This was not possible in the United States. Instead, another significant though commonplace device of our industrial society was used. France and her allies offered high prices for all kinds of war stuffs, and this meant large profits for the men who were willing to make these goods. Thus our business men were persuaded to hire laborers, buy or make appropriate tools and machines, remodel or build factories, and proceed to make guns, shells, explosives, Army shoes, Army blankets, chemicals for military purposes, traction engines, ambulances, "tanks," barbed wire, Army motor trucks, and the many other materials of war. These things crossed the ocean in streams. They scarcely took off the edge of the appetite of greedy Mars. Our business men were persuaded by continued high prices for war goods to turn more and more of our productive energy into these channels. This meant a lessening of the productive energy available for other needs, and soon there developed in this country a scarcity of goods not used for war. Then the prices of those goods rose. Without being conscious of it, this was the method of persuading manufacturers to make ordinary goods in larger quantities.

It becomes clear why, even before the United States became one of the participants in the war, prices of ordinary things rose very rapidly. It becomes equally clear what is meant by saying that in modern society prices and profits constitute a device by which men who direct productive energy are persuaded to make the things that are desired. It is quite remarkable how true it is that nearly everything we want has been produced and is waiting

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16. "Profits direct productive energy." How? Is productive energy directed by any other means?

17. How do you account for the fact that, speaking generally, the things which are produced are the things we desire?

18. How does it happen that we are not all doing the one thing, such as making watches, for example? Is there any law against it?

19. Does society let all of us do anything we choose? Would society let you practice medicine, beginning to-morrow?

for us to consume it. This is because business men have, through hope of profits, guessed or estimated our needs in advance and have directed productive energy into the desired channels.

#### THE INTERDEPENDENCE CHARACTERISTIC OF MODERN LIFE.

Other happenings of the war showed us how true it is that one of us may be vitally affected by what another does; how true it is that few people to-day can live their own lives, but rather are units in a great, organized, interrelated society. Start a large or significant force operating in one place in our society, and its consequences are felt literally to the ends of the earth.

Very quickly after the outbreak of the war, ships owned by citizens of the central European powers were swept from the seas. Some were destroyed; others were interned in neutral harbors. They were no longer available for carrying goods. The nations which were fighting the central European powers controlled the seas and, without great danger at the outset, they continued to carry goods. Here, again, war's wants had to be met first. England and her allies needed ships to carry troops, to chase submarines, and do scout and patrol duty. Ships can not be built in a short time. England had to take for war purposes ships which had been engaged in carrying cotton, meats, wheat, flour, etc., between the various nations of the world. These ships were assigned to war uses in great numbers. To meet the needs of commerce there were restored to service old boats which had been discarded. Ships previously engaged in coastal trade were put into transoceanic traffic.

In spite of all that could be done, however, there remained a shortage of ships. Bad matters speedily became worse. Germany began to sink ship tonnage by means of her submarines. Tonnage, as used in ocean traffic, means the content or burden or

20. "A large force operating in one part of our society is felt literally to the ends of the earth." Find some other illustration of this than the one given in the text.

21. Ask your druggist what has been the result of the war on the prices of drugs. Ask him the reason for that result.

22. What is coastal trade? Taking ships out of coastal trade puts a heavier burden on our railroads. Why?

23. What is social control? Does a trade-union exert social control? Does a church? Does a business man's club? Does a court?

24. What is a business man? Name 10 different kinds. Is a lawyer a business man? Is a farmer? Is a teacher?

carrying capacity of a vessel, and it is customary to regard 40 cubic feet of space as 1 ton. It has been computed that we and our allies had at the opening of the war about 26,000,000 tons of shipping available for over-seas traffic, and that neutral shipping to the amount of 6,500,000 tons could also be used. Making allowance for new building, the submarines of the central powers have probably caused by the middle of 1917 a net loss of 2,500,000 tons and have frightened from the seas an additional 1,500,000 tons. This means that freight can not be moved between nations in accustomed quantities, and it is interesting to see how that fact affects even the members of families living inland, who have never seen the ocean or a ship.

It will be remembered that our business men were eagerly engaged in making things to send to Germany's enemies. These goods moved to the seaboard in freight cars, and the expectation was that the goods would be transferred from the cars to ships and that then the cars would be released for other work. But when the cars arrived at the seaboard there was a scarcity of ships. There were not enough warehouses and storage places to hold the goods; so they were left on the cars. Presently scores of miles of freight cars were on the sidings of railroads leading to the Atlantic coast. Somewhat later it became painfully apparent that these cars standing on the sidings were not available for carrying the things which they carried in times of peace, and people living inland could not get the coal, wheat, clothing, and other things they desired. Business men could not get satisfactory deliveries of the coal and raw materials they needed to conduct their business and could not be prompt and efficient in delivering finished products to customers. Closed factories, disrupted industry, and poorly satisfied wants came to many parts of the United States as a consequence of fewer ships for commerce. Society is very interdependent.

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25. "The incessant demand for war goods causes a scarcity of goods not used for war." Why?

26. Do your shoes cost more than a similar pair cost prior to the outbreak of the war? Your shoes are not Army shoes. Civilian shoes are not in as great demand because the soldiers are now wearing Army shoes. Why, then, should civilian shoes cost more?

27. Books are not shot out of guns at the enemy. Why should the war cause paper to go up in price?

28. "Every time you waste a slice of bread you hinder the making of munitions of war and delay victory." What does this mean?

## DIRECTING PRODUCTIVE ENERGY BY SOCIAL CONTROL.

We have seen that prices and profits form one of the devices for getting productive energy into the desired channels. This is not the only device. There are cases in which it is not the best device. For example, the high prices of goods resulting from having freight cars tied up could not release these cars or cause more to be made overnight. In this case, another way out of the difficulty was adopted. Society stepped in and through an organization or committee made rules governing the movement of freight cars.

When society, acting as a whole or acting through some committee, such as a legislature, controls or regulates activities, we call it social control. If the control is exercised through some such vague means as public opinion, we are likely to say it is unformed or unorganized social control. If the control is through a law or the act of some body of officials or some similar definite agency, we call it formal social control. Whether formal or informal, the essential point is the same. Society as society is regulating things.

A good illustration of how society, working through its agent or servant, government, may set about controlling things in a formal or conscious way is seen in the work of the British Priority Committee. This committee was formed by the English Government to see that important things were given right of way over unimportant things. England at war could not leave to prices and profits the determination of what was to be made first.

It is not a simple matter to satisfy all the needs of war. The nations must economize and will have to economize still more. Even of a single war commodity, such as steel, there is not enough for all purposes, and a decision must be reached concerning how much may go to each purpose.

29. "There must be some error in this notion that food is scarcer than usual. There is just as much land as ever, and the sun and rain still mature the crops." Reply to this statement.

30. "Mars thrusts his brutal hand into the home of every civilized family, even in the nations not at war, and takes food from women and children." What does this mean? Switzerland is not at war. Why do her women and children suffer? Chile is not at war. Does Mars have his hand in the homes of Chile?

31. Would we need laws concerning theft if all goods were as free as air? Show that laws, judges, courts, and policemen are necessary, in part, because things are not free as air?

In the English experience the Admiralty wanted steel for battle-ships; the Ministry of Munitions wanted steel for guns and shells and areoplanes; the Agricultural Department insisted that the stock of agricultural implements be kept up to raise crops to feed the soldiers. At the same time, the railways carrying supplies for the navy required new rails, and various business concerns manufacturing munitions needed steel for replacing machines that were worn out. These are only a few of the many war demands on steel.

This is the way the British Priority Committee apportioned the various demands. It classified or graded possible orders for such things as steel, timber, and explosives, according to the relative importance of the orders for war purposes. Class A means Government war orders; class B covers things immediately required to maintain continuity of output and normal stocks; class C includes everything else. Class A is divided into four subclasses again according to relative importance. All A-1 work must be done before A-2, A-4 work before B work, and B work before C work. A manufacturer who has an order for shells must put it ahead of all other orders, except other orders of the same class. In doing this he may depend upon having priority in getting raw materials, men to work them, and railway service to transport materials and product. Here is a very effective device for guaranteeing that the important things shall be done first.

Social control is, of course, used in many other ways and for many other purposes. For that matter, the foregoing discussions concerning the cooperation of specialists in our society, the necessity of economy, the use of prices and profits to direct productive energy, and the interdependence of modern life, do little more than hint at the parts played by these factors in modern society. Much more remains to be told concerning all these matters in later lessons. In the later lessons, also, we shall learn something of the significance of machinery industry, private property, competition, speculative industry, the wage system, and the individual guidance of industrial activity. But these are other stories.

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LESSON A-2. THE WESTERN PIONEER.<sup>1</sup>

Toward the close of a spring day in the early seventies a "prairie schooner," canvas-covered and dusty, made its way slowly over the prairie of what is now a western State.

The wagon was drawn by a pair of tired but powerful horses. Led behind, trailed a jaded mustang. On the wagon seat was a large-framed, bronzed-faced man. He was thin, gaunt, and stoop-shouldered, but his deep chest and great hands indicated strength and endurance. His eyes were clear, his face bearded, and his brows drawn into the scowling squint that comes from living in the glaring sunlight.

For many days this man had been driving westward over the prairies. He was seeking a new home. He had left a wife and four small children in the settlements 200 miles behind and had gone into the open unsettled country to lay claim to land, build a house, and make certain that a living was to be found before he returned for his family.

As he rode his restless eyes were continually roving over the plains. Partly, he was on the lookout for danger, for the Indians had not yet entirely abandoned their claims to this territory; but even more carefully he was looking for the location that he could feel sure would yield him and his family a living.

Time and again, when he had camped on the bank of a river or in a sheltering grove, he had carefully studied the surrounding country, considering whether it was the sort of spot he was seeking. At times he had camped for several days on one location, half convinced that nothing could be gained by going farther. But always he had decided to move on; always he had decided that a spot could be found where a better living could be made or where a good living could be made more easily.

He came, however, upon a locality which at once pleased him. He brought his team to a willing stop and decided to camp for the night. His horses were watered at the river, at the bank of which he had paused, and were then tethered. His simple re-

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<sup>1</sup> Prepared by Leverett S. Lyon, instructor in the University High School and the School of Commerce and Administration, University of Chicago.

Modern life is very complex, and we shall understand it better if we begin with a simpler condition; therefore this account of how a pioneer met his relatively simple wants is introduced here. It shows something of the kinds of wants men have, and how important it is to have good natural resources and able men in order to meet these wants well. It shows how a society can satisfy more wants than can be filled by isolated men and can do it more easily.



freshments over, he crawled under his wagon, rolled into a pair of heavy blankets, and was soon asleep.

NATURAL RESOURCES ARE IMPORTANT TO THE FRONTIERSMAN.

The next morning the pioneer began to survey carefully the locality around him. He observed the land to be a slightly rolling prairie. The soil was black and, from the rank grass that covered it, appeared capable of producing a variety of crops. A river of fair size meandered across the plain. Along its banks cottonwood, oak, walnut, and other trees grew thickly at places; and where smaller streams joined the river the trees spread into dense groves.

The river and the smaller streams proved to be well stocked with fish, and frequent herds of buffalo and antelope could be seen on the prairie. Jack rabbits and prairie chickens now and again started out of the grass ahead of him, and in one of the groves he saw a pair of prairie wolves skulking out of sight. The banks of the stream showed that mink and muskrat made their homes there, and several flocks of geese and wild ducks could be seen feeding in a marsh farther down the river.

The pioneer knew well from the reports of explorers that the climate of this whole region is varied; that although the summers are at times extremely hot, the winters are, often for weeks, cold and snowy. The rainfall is, he had been told, usually sufficient for producing crops; the winds are generally moderate, though occasionally violent, and the air is healthy and bracing.

The more carefully the frontiersman surveyed this locality, the more favorably was he impressed by its many desirable qualities. He saw that nature had provided here a storehouse from which he could draw a comfortable if not a luxurious living. In the rich black soil he saw the possibility of good crops of wheat, corn, and oats; while to secure hay for his horses he needed only to cut and cure the natural prairie grass. The trees of the groves and along the river offered him the natural resources for satisfying a variety

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1. Get time-tables from the agent at the railroad station and trace the routes of at least three transcontinental railroads.
  2. Do you know anyone who has taken up a claim? How did he do it? What is the homestead act? Is land still open to occupation under the terms of the homestead act?
  3. This pioneer went alone. Have the settlements of recently opened lands been made by single pioneers traveling in prairie schooners?

of wants. The oak and walnut trees could be cut into logs from which a cabin of strength and warmth could be built. Their tough fibers would make a fort-like protection against the bullets of possible enemies. For other buildings, such as a stable for his horses and a shed for his wagon, the softer, more easily worked cottonwoods might do. He could easily get the raw materials for constructing furniture, for repairing his farm implements, or for making new ones if occasion required. The underbrush and dried limbs that had fallen would give him, with very little work, a plentiful supply of firewood.

The frontiersman was particularly pleased with the abundance of game. He knew well that his best efforts could not procure a crop of grain before early autumn, and in the meantime the buffalo, the antelope, the prairie chicken, and the fish would furnish a plentiful supply of food for his table. The hides of some of these animals could also be used for clothing and as a covering for the floor of the cabin which he intended to build. The frontiersman was satisfied; he decided that he would end his pilgrimage and establish his new home in this place.

Temporarily this frontiersman could rely largely on the things which he brought with him on his journey. He had under the cover of his "prairie schooner" some tools and simple farm implements and a fair supply of seeds of various kinds. His bacon, sugar, and tea had not been entirely consumed. Some wearing apparel, bedding, a clumsy stove, and a few cooking utensils and dishes he had with him. While the weather was warm, his wagon would furnish him sufficient shelter. But these conditions could not be relied on permanently; the weather would turn cold and his provisions would run low. To make a permanent home here he must make this locality yield him a living.

#### THE SELF-SUFFICING PIONEER CAN NOT SPECIALIZE.

Within a few months the pioneer built himself into his new surroundings. Everywhere are evidences of the natural strength

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4. What are the conditions for which frontiersmen would naturally look in selecting a place for their homes?
  5. Find a picture of a prairie schooner. Why did the frontiersman use this method of travel?
  6. When was it first possible for one to travel to the Pacific Ocean on a railroad?
  7. Suggest some ways in which a mustang would be a valuable part of a man's possessions.

and skill which he used in making over the raw resources about him into things to meet his wants. In the side of a small hill he cut a clean perpendicular face. This flat surface was made to serve as one wall of a house, while the other three sides were made from logs. Between the logs of these walls were many wide cracks and small crevices not yet closed, though on the north side of the cabin they were effectively stopped with mud.

The roof of the new cabin was constructed of rafters of small logs overlaid with sod, in some of which the grass had not dried but grew as freshly as before it was taken from the prairie. The floor was rough and uneven, though the frontiersman made some attempt to smooth the surface. There is but one room and that, though ample for the needs of this single pioneer, was not large in size. The clumsy stove furnished means of heating and cooking.

All about the room were evidences of new devices which the frontiersman made in an effort to satisfy his needs. These showed ingenuity, patience, skill, and strength, but indicated clearly that though the frontiersman is a jack-of-all-trades he was not a master of any of them. The workmanship of the cabin showed plainly that he was skillful with an ax but suggested equally clearly that the aid of a sawmill would have resulted in a much better structure. As a carpenter and woodworker, he could not claim to be more than a fair hand; and when ironwork was needed, he was handicapped both by a lack of materials and by a lack of skill. A pair of wolfskins carpeted the floor, and over the bed a half-tanned buffalo hide supplemented the blankets. The tanning process had not been by any means perfect, and the hair that came easily from the dried skins was scattered about the room and the bed.

Outside the cabin was the frontiersman's farm. A number of acres of ground had been plowed and a fair crop of corn was ripening. At farming he was at his best, as long practice before he left the settled country had given him a considerable degree of skill and knowledge in this work. Nevertheless, from the number of weeds that pervaded part of his cornfield, it was

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8. What are the natural characteristics of Iowa and Missouri that made them more attractive to settlers than the Territory of Dakota?

9. Make as long a list as you can of the ways in which the following resources could be of significance to the frontiersman: Soil, rivers, temperature, rainfall, wind, the flora, and the fauna.

apparent that he was handicapped by a lack of implements or by the necessity of turning to other work when his corn needed attention.

In addition to the work in his cornfield, he had done the labor necessary to break the sod for a new field. In this he would sow during the autumn a crop of winter wheat. He was not certain that his wheat seed would survive the winter in this region, but he had no method of finding out other than by experiment.

The pioneer used good judgment in the distribution of the time that he had at his disposal. He succeeded in getting his cabin nearly enough completed to furnish a fair protection during the winter, and at the same time he had not seriously neglected his farm.

#### HIS BRIDGE ILLUSTRATES THE IMPORTANCE OF CAPITAL GOODS.

He realized that it sometimes pays to "make haste slowly." He constructed a bridge across a sharp ravine lying between his house and his fields. The bridge, crudely built of logs, required the work of several days, but several times each day it saved him the time that would have been consumed in driving his team to a place where they could cross safely. The bridge was but one illustration of several things he had done the better to wring his living from nature. For example, he built a barn. He repaired several of the tools he brought with him, and he made a crude plow and a wooden harrow.

#### HIS ENVIRONMENT INFLUENCES HIS WANTS.

Much as the conditions around the pioneer changed, they changed no more than the pioneer himself. He found that his wants expressed themselves in different ways. Although more hungry, more thirsty, and more tired from his arduous work than he had ever been before, he did not think of the satisfaction of these wants in the same terms that would have occurred to him when he was back in the settlements. When he was hungry, he

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10. If your father were planning to move to a new location, either in your town or elsewhere, would he consider carefully all of the things mentioned in question 9? Think carefully why, or why not. What would be the considerations that would be most likely to determine his choice, and what light does this discussion throw on the organization of a modern community?

was most likely to think how satisfying would be a large piece of roasted buffalo meat and a slice of corn bread of his own baking, made of his dwindling supply of meal.

Thirst expressed itself to him in a desire for nothing but the water that he habitually drank from the clearest stream in the neighborhood. When worn with work, it was for the comfort of his skin-covered bed that his body yearned. As the clothes that he brought with him became worn and cut by the rough work of hunting, carpentering, and farming, he had no thought of replacing them from the stocks of haberdashers. "Wearing quality" had for him become more and more important, and for this purpose the home-tanned skins of animals were well suited.

A cotton shirt still survived the wearing work of the farm, but his soft felt hat had been replaced by a squirrel skin cap of his own making, and in place of shoes he wore a pair of moccasins made from the hide of an antelope. What other people were wearing or what they might think of his clothes was of decreasing importance to him. The fashions of settled communities did not reach him; he was under the criticism and comment of no one, and in fact he gave the whole matter little thought. As the clothes that he brought with him wore out, or as his household utensils or farming implements were broken or gave way, he replaced them from the raw materials at hand in the way that best suited his needs.

#### NO SCHEDULES GOVERN HIS ACTIONS.

In spite of the fact that the pioneer was fairly well established on the prairie farm, he seemed to be as crowded with work as he was in the early days of his first settlement. In fact, it seemed that tasks multiplied rather than diminished. At whatever hour he arose in the morning, his first task after his horses were fed and cared for was to prepare his breakfast. His hour of arising was, however, becoming very irregular. Sometimes he was up at sunrise and early at his work; at other times when especially

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11. If you live in a town or city, try to find out, perhaps from a local grain or feed dealer, where the corn, hay, and other feed used in your town come from. Find out where the coal and wood used in your home come from.

12. Is game ever eaten on your table? If so, what kinds? Can you find out where it comes from? Can you learn the locality from which comes the fur used in any of your clothing?

exhausted from the preceding day or when heavy rain made work on the farm impossible, he slept far into the morning. If he was on a hunt which took him far over the prairie, he was not disturbed so far as regular hours are concerned if he did not get back until late in the light; or if a storm threatened when he was anxious to complete certain outside tasks, he would work as long as it was possible to see what he was doing. His time was his own. No one else was concerned with or disturbed by his irregularities and he went about his daily duties more by the spirit than by the clock.

#### HE FINDS HE IS A GREGARIOUS ANIMAL.

The pioneer was reasonably well fed, clothed, and sheltered. Those wants, changed somewhat in character by his environment, were met in at least a moderate fashion. Even concerning these wants, however, he did have periods when he wished a more varied diet. The bacon he brought with him lasted hardly a week after his arrival; his supply of sugar, flour, and tea was so low that he used them in miserly fashion. There remained the abundant game and wild berries of his environment, but more and more he thought of the sameness of his food.

But he had other wants which in his isolation he could not gratify. This fact was impressed upon him when for several days in succession he saw smoke signals of Indians. So far as he knows, the nearest soldiers were at the Government fort 100 miles farther west. If an attack should come, he must defend himself. He was no coward, but during several days he abandoned his work and watched. He had time and occasion during these days to think of the advantages of community life. He was impressed as never before with a great sense of his aloneness, his self-dependence, his isolation. He thought of the comfort that would come from having his family with him and the confidence and aid that he could find in neighbors. He realized well that neighbors bring new responsibilities and put restraints upon his absolute freedom. If neighbors come, they might question his right to the best areas for farming; they as well as he would

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13. If you move to another town, you would not need to carry supplies, as the frontiersman did. What would you carry into the town, and what assurance would you have that you could get supplies?

14. In constructing a cabin of heavy logs, do you imagine two men could do more than twice as much work as one?



make inroads on the supply of game. Tracts of timber would be preempted by others and he could no longer cut trees where he chose. He had come into the west to build his new home unhampered by the restraints that come from living in contact with other people, and he knew that if other settlers arrived he would find himself subjected to the will of other individuals and of the society that would grow up around him.

On the other hand, he saw that he would be safer in many ways if friends were around him. They would help protect him from the Indians. Very likely there would be a physician among these friends who could help him in case of accident or sickness. In addition to increased safety, he reflected, he would gain by having friends to help him in the heavier tasks. He remembered very clearly the toil involved in building his house by himself. And above all, now that he had time to think about it, he found that he was very lonely—that he wanted to see the faces and hear the voices of other people.

Even after all signs of impending trouble from the Indians disappeared and he was again about his work, he still turned these matters over in his mind. Finally, his thoughts resolved into the decision that he would not wait until spring, as he had intended before returning to the settlements for his family. He decided that as soon as his grain was harvested and under shelter he would undertake the journey to the settlement and bring his wife and children to their new home in the West. He decided, moreover that he would encourage others to follow his trail the coming year. He would tell of the richness of the land, the supply of game, the salubrity of the climate, and of the comparative ease with which these could be turned into want-satisfying goods. He would point out that a group working together in the midst of such abundant resources should be able so to conduct things as to have a rich, full life. He would make every effort to bring people into the locality where he had lived alone and to convert his isolation into a community.

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LESSON A-3. THE COOPERATION OF SPECIALISTS IN MODERN SOCIETY.<sup>1</sup>

When John Thurston graduated from high school he was anxious to find a job. He wanted to go to college, and expected to go eventually, but his father insisted that he should work at least a year before he went. John did not know whether his father could afford to send him to college. He did not know definitely how much his father earned, and he knew even less about how much it cost to pay the rent, the grocery bills, to supply clothes for his father, mother, two sisters, and himself, and to meet the other miscellaneous expenses of maintaining the home.

Sometimes he thought that his father was not very generous about the college matter. At other times he decided that his father needed his help. Taking it all together, he knew very little about his father's business or about any other business. He found, on thinking the matter over, that he had taken his support very much for granted and had given very little thought to the kind of world he lived in or to how it came to be what it is.

At all events, he was now interested in getting a job. A few days after graduation, sitting at the dinner table, he told his father, who was a factory inspector, that he thought he would like the automobile business. He decided to try to get a job at the automobile factory in the south end of the city. "If I could get in there," said John, "I ought to be able to learn all about the business in a year."

"Learn the business," laughed John's father, "all of it, in a year, and while you are working 10 hours a day at some specialized piece of work?"

"Son," he continued, "you should get a few ideas about how the world is put together nowadays and some general notion of how business is carried on before you decide about the kind of beginning you will make. And I am by no means sure that going to work in a business is the best way of learning about that business as things are now organized."

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<sup>1</sup> Prepared by Leverett S. Lyon, instructor in the University High School and the School of Commerce and Administration, University of Chicago.

This story of a modern boy and his discovery of the complexities of modern society makes a sharp contrast with the preceding lesson. It shows that our society is made up of cooperating specialists, using machine industry, and that the whole of modern life is subject to social control.



"Well," said John, "if going to work isn't the best way to learn business, what is the best way?"

"I am not sure that I know," returned his father, "but do not be in a hurry. Business to-day is a big and complicated affair; there are a lot of parts in it, and these parts are related to each other in a way that you know very little about. Let us spend a few days looking things over before plunging in for life."

"All right," said John, "I am in no hurry to go to work. When shall we begin looking?"

"To-morrow morning," said his father, "I am going up to inspect a shoe factory and I will drop you off at the Snow Flake Flour Mill. You may as well start by seeing something of where our bread comes from; that is a simple, everyday affair and ought to be easy."

#### THE FLOUR MILL.

The next morning the Thurstons arose early. John's father said he wanted to make his inspection at the shoe factory before the day shift went to work. They tried to catch the car that passed the house at 6.30 but missed it and caught the one at 6.45. As they approached the Snow Flake Mill, which looked like a group of several factories and a large grain elevator, the whistles were blowing 7 o'clock.

A crowd of men who appeared to have worked all night were leaving the mill yard; and a few stragglers, apparently late for their day's work, were hurrying into the gate. John and his father went to the office, where John was introduced to Mr. Walling, the manager, and their errand was explained. Mr. Walling was very willing to have John shown through the mill.

John learned that the process of making flour was a long one, involving many separate operations. There were three fundamental processes through which the grain passed: Cleaning,

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1. How could one who has decided to go into business find a suitable place? Are there agencies or organizations which assist in solving such problems?

2. Everyone is naturally anxious not to go into a kind of work which is being abandoned in our society. How can one find out about such matters?

3. Talk with several friends who have been working in banks, offices, or factories for a year or two, to see whether they think they are progressing in general knowledge of the business.

tempering, and reducing. The wheat was brought into the mill by cars from which a man operating a huge power shovel dumped it into a great storage bin. From the bin it was elevated to the top of the mill by an endless chain of large steel cups. At the top of the mill the wheat was weighed, and then the process of cleaning began. First, it was screened to remove husks, dirt, and weed seed. It was then sent through the metal brushes of a scouring machine and into a washer to remove other dirt. After this the tempering process began. The purpose of this was to put the wheat in the best condition of hardness or softness for grinding. Heat and moisture were applied by various machines to make the outside covering of the grain, or the bran, tough so that it would remain in large pieces when the kernels were broken. The interior of the kernel was put into such a condition of hardness that it would break and crush as the miller desired. When the wheat was properly tempered, the grinding or reduction process began. This, John saw, was accomplished by passing the wheat through a series of six or seven sets of steel rollers. Each of these sets of rollers crushed the wheat somewhat. Each crushing was called a "break." After each break, before the wheat was sent into the next set of rollers, an effort was made to extract as much of the bran as possible from the crushed wheat.

To accomplish this, the broken grain was poured into large sifters. These were somewhat like the flour sifter which John had often seen his mother use, but very much larger. As they constantly revolved, they sifted the crushed grain through a series of sieves made of silk or fine metal wire cloth. The cloth was called "bolting cloth," and the whole process was spoken of as "bolting" the flour. John was told that only a small part of the wheat came through the first set of sieves. That which did come through was sent through the purifier and was put up as a low grade of flour.

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4. Talk with some friend who is working in a machine shop to find out whether he knows where and how to buy the raw materials and where and how to sell the finished goods.

5. What is to be said for and against the statement that one learns a business by working at it?

6. What are the other ways of learning a business?

7. What institutions are there that undertake to prepare people for business? What is the length of their courses? How could one find out about the quality of the work which they give?

The crushed grain that did not pass through the first sieves was then sent through a second set of rollers, or what is called the second "break." Again a small amount of flour was sifted through the bolting cloths, and the rest was taken to the third break. Before John was through, he had watched the grain pass through six or seven sets of these rollers, or as the mill men spoke of the process, through six or seven "breaks." After each break the broken kernels were bolted or sifted.

John learned that some flour was sifted or bolted out after each break, and that finally the stream of broken grain was cleaned of bran by a "bran duster." Before any of the bolted flour was ready for packing it was put through a "purifier," where very fine sieves and light currents of air took out the remaining impurities.

John was surprised to see that when the flour came through all these many operations it was rather dark in color, not white like that which he had seen his mother use in the kitchen. He was shown, however, that the whitening or bleaching was accomplished by spraying the flour with a stream of air containing nitrogen peroxide. This chemical, he was told by the mill men, whitened the flour by decolorizing the oil of the wheat.

When the flour was finally ready for the bags, it was dropped into a large chute at the lower end of which was a hollow cylinder. This cylinder was part of a packing machine; the bags were slipped over the lower end of it and the flour was packed almost automatically. The bags were of the various sizes which John had frequently seen in grocery stores. The larger ones were made of cloth and the smaller ones of heavy paper.

Last of all, John was taken into the mill laboratory. There he saw the entire flour mill set up and operating in miniature. With this, experiments were being made by mechanical engineers who

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8. Do institutions commonly aim to prepare people for the lower grades of positions or to become managers?

9. Look up advertisements published by correspondence schools and decide from a careful reading whether all of the promises that they make are likely to be fulfilled.

10. Do the street cars in your town or city operate on a regular schedule? Suggest some ways in which this makes them of more service. Make a list of other regularities in the community life about you. Compare the usefulness of a watch to you and to the frontiersman.

11. "It is amazing how much our life has been standardized and reduced to schedule. We even get our amusements by schedule." Illustrate.

were trying to improve the processes in the Snow Flake Mill. He was also much interested in the work of the chemists. They were busy "tempering" wheat in various ways and then testing the kind of "break" that would result when it was put through the rollers. Others were experimenting with new methods of bleaching or whitening the flour.

Everywhere throughout the mill John had seen men at work, but many of them looked to him more like machinists than millers. One was operating one machine; a second, another; others were wheeling and stacking bags of flour in a storehouse or loading them on cars. John was surprised to find how little these men knew about the various processes and the parts of the mill in which they were not working. When he asked for information, some of them could tell him quite clearly what was done by the machines which they were operating, but others seemed to know very little about the process except how to keep their own machines running.

When his father called for him at noon, John talked excitedly about what he had seen and concluded his description, "It certainly takes a great deal of machinery and a great many men doing a great many different things to produce the flour for bread. There must be scores of men in that mill, each one of whom is doing a different thing, and it must have cost hundreds of thousands of dollars to build that plant before it could have turned out enough flour for a single loaf of bread."

"Yes," said his father, "that is one way in which business of to-day differs from the business of my boyhood. It is much more specialized; that is, people work at some small part of a great process, and it is only by having all of these specialists organized so that they cooperate that good results are accomplished. There is more specialization in many factories than there is in that flour

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12. "The machine is largely responsible for the way we live on schedule." Explain.

13. What do mills and business houses do in order to make sure that the employees will be on time? Why is it important that the employees should be on time?

14. Find out something about the development of milling processes. What were the methods of milling flour used before the development of the numerous technical processes described in the text.

15. What grinding processes are still practiced in the home? Why does one not ordinarily grind wheat and corn in the home? On the other hand, why does one find mills for certain purposes in the ordinary kitchen?

mill. For instance, in the shoe factory which I inspected this morning there are hundreds and hundreds of men and women who are operating machines which do some small part of making a shoe. These workers know very little concerning any part of the work except the operation of their own machines. A lining stitcher sews together the different pieces of the lining; a "closer-on" stitches the lining into the shoes. A "gang-punch operator" punches the holes for the eyelets. An "eyeleter" puts in the eyelets with another machine. A "hooker" puts in the hooks with still another machine. In working on the heels, a "heel slugger" drives into the heels a row of brass or steel nails. A "heel-trimmer" trims or shaves the curved edge of the heel. A "heel-scourer" sandpapers the heel. A "heel-breaster" cuts the front of the heel with a knife driven by a foot lever. A boy called an "edge-blacker" blacks the edges of the heels with a brush. An "edge-setter" hardens this blacking with a block of steel cut to fit the edge and heated by gas. There are separate persons to stamp on the name of the company, to polish the shoes before they are inspected, to inspect them, to put in the laces, to wrap them, to box them, and so on almost indefinitely. In the entire factory there are more than 100 little specialized tasks nearly all of which are done by machinery. Each piece of machinery is operated by some one person who does nothing else and has very little opportunity to learn anything about any other part of the work."

#### THE COOPERATION OF SPECIALISTS.

"And all those people must cooperate in their specialized work to turn out a single pair of shoes?" asked John.

"Yes," said his father, "and in some factories this specialization is carried even further. In the large meat-packing plants, as many as 9 or 10 different men will work merely on the hide of

16. Go to the kitchen and try the experiment of sifting either flour or some other material and find out why some sifting processes are still carried out in the home.

17. Many of the materials used in modern life are either bleached or artificially colored. What is the motive of the manufacturer in making these changes in the natural color of material?

18. Are any bleaching processes carried out in your home? If so, what are the chemical agents used?

19. The present war has led to great increase in the price of wheat. This has also led to a change in the price of a loaf of bread. Find out some of the reasons for these effects produced by the war. What steps has the Government taken to check the rise in prices?

an animal. One does nothing but pull off the tail; a second skins a part of the animal where the work is easy; a higher-priced man has still a different part of the hide to remove, and so on, each man being an expert in doing over and over again his one specialized duty."

"And I suppose, when you come to think of it," said John, "all of the men working on that hide must be counted as cooperators with the fellows who are cooperating in the shoe factory."

"Yes; that is true," said the father, "the shoe factory could not run very long if the hides were not provided to make the leather."

#### THE MIDDLEMEN.

The next morning at breakfast Mrs. Thurston remarked, "John, before you and your father go out making any further surveys of the structure of industrial society or business organization, I should like you to run over to the grocery and get me a small sack of Snow Flake flour. We can't have it delivered; all the drivers are on a strike."

"Snow Flake," exclaimed John, "That's the kind of flour you use. Why do you happen to use that brand, mother?"

"I hardly know," replied Mrs. Thurston. "Perhaps it is because it is always advertised in the papers and magazines, so that I have always heard of that kind. Besides, our grocery doesn't sell any other."

"So we eat bread made by all those men and machines that I saw yesterday," said John. "That makes Snow Flake interesting. Do you mind if I go to the bank before I come back? I'll deposit in my savings account that \$10 check which grandfather gave me as a graduation present."

"Any time before night will do," answered his mother; and

20. Can you name any improvements made in recent times in the cultivation of wheat?

21. There are a number of varieties and grades of wheat. How are the grades determined? Find out what you can about the different varieties and the special uses to which each variety is adapted.

22. Are flour mills located in the regions where the wheat is grown? What are the conditions that decide where a flour mill shall be located? Where are the great milling centers in the United States?

23. Is wheat raised in your community? If so, what varieties? To what extent? If not, see if you can determine why not. If wheat is not, what is the principal crop on the farms about you? Can you determine why this crop leads?



John was off. He stopped at the grocery and asked the groceryman to have a sack of Snow Flake ready for him when he returned."

"And, by the way," said John, "of course you know Mr. Walling, the manager of the Snow Flake mill."

"Who?" inquired the groceryman. "How should I know him? I have never been near the Snow Flake mill and I have never heard of Mr. Walling."

"But you buy flour of them, don't you?" queried John.

"Buy from them. I wish we could, and get millers' prices. They do not job flour; they never sell to retailers. No; we buy from Ray & Sons, the grocery jobbers. They buy from that mill and a half a dozen others—all grades of flour—and deliver to various grocers the kinds and amounts desired. We handle only Snow Flake XXXX; that is the best grade."

"That puts many more people into the cooperation that furnishes me with a loaf of bread," thought John, "the jobbers, the retailers, and all the delivery men." Then he asked the groceryman, "Why do you sell Snow Flake only?"

"It's the only kind our customers want. Our customers all read the national magazines and the Snow Flake mill is a great advertiser. We advertise it a little ourselves in the newspapers so as to keep people asking for it."

"It never occurred to me before that a groceryman had to consider what magazines his customers read," said John thoughtfully. "In fact, a great many things about business had not occurred to me. Still, I have learned some things since yesterday morning."

#### THE COOPERATION OF THE BANK.

At the bank John had just left his \$10 check at the window marked "3½% Interest on Savings," and had turned to go out when he saw Mr. Walling, of the Snow Flake Mills, smiling at him.

24. Do you know of any industries in which special laboratories experiment with the manufacturing processes? Why is it better to have a laboratory than to make the experiments in the mill itself?

25. Do mills and factories make use of the laboratories in schools and colleges? To what extent does the Federal Government supply laboratories for industrial processes?

26. A mill or factory is known as capital goods. How far did a frontiersman have capital goods?

27. "One outstanding difference between the life of to-day and that of 200 years ago is the vast amount of capital goods we have to-day." Make a list of the consequences of this difference.

"Ah, that's what I like to see," said Mr. Walling; "money coming into the bank so I can get some of it out again."

"I don't understand. Do you mean that you get my money? How can you do that?"

"Oh, I thought you understood," replied Mr. Walling. "You see, this is the season of the year when our company makes large purchases of wheat, and to do this we borrow money from the bank, paying it back in a few months, after the flour has been sold. Your money and that of many other depositors makes a large fund from which the bank can make loans. As not all of you will ever want your money at the same time, all the bank has to do is to keep enough on hand to pay what is demanded. The law requires that a certain percentage of the deposits shall always be kept in cash."

"So you and the others who borrow are the ones who pay me the interest that I get; and I, if my money helps you in your business, am aiding in grinding flour at the Snow Flake Mills. Am I right?"

"You are certainly right," said Mr. Walling. "You and about two thousand other people who have deposits here cooperate with us whether you know it or not. The bank, you see, is simply the agent that collects the money so that we who want to borrow know where to find it. You who wish to lend small amounts would have a hard time finding borrowers without the aid of the bank. You see the bank is a sort of financial middleman."

"You seem interested in such things," continued Mr. Walling. "I am going over to the board of trade now. Do you care to go?"

"I should like to go with you," answered John. "I have been there before, but I never knew what it all meant."

#### AN ORGANIZED MARKET.

As they approached the board of trade they could hear a great noise of voices. They entered the building and went up to a balcony where they could look down on the large room below.

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28. Ask your father and, if possible, your grandfather to tell you of any ways in which he thinks business of to-day differs from the business of his boyhood.

29. Why should the factories in which shoes are made exhibit a higher degree of specialization than that shown in most other factories?

30. Where are the chief centers of the packing industry? How did it happen that the packing industry was located at these centers?



In the center of the room was a circular platform 2 or 3 feet high and about as large as a circus ring. It was depressed in the center into a sort of saucer shape, and steps were around the entire outside. Swarming all over this "pit," as Mr. Walling called this platform, were more than a hundred men. All were making signs and shouting in apparently random confusion.

"Do not be misled by the noise," said Mr. Walling. "Every man in there knows what he is doing. They are buying and selling wheat. Reports from all over the world about conditions that would make wheat scarce or plentiful come in here. The United States Government gathers the best of these reports, on rainfall, insects that destroy grain, needs in Europe—everything. If the reports indicate that the wheat crop will be small or the demands very large, the buyers like myself are compelled to pay a higher price than when the reports show a 'bumper crop.' The millers are among the largest buyers, and the warehousemen who buy from the farmers are among the largest sellers at this pit. You can see how much simpler it is for me to come here and have my agent or broker buy wheat than it would be for me to go out to the hundreds of farms from which it is necessary to secure wheat to supply our mill. If I had to buy from the individual farmers, I should not only have trouble in reaching each one, but I should never know what price to offer. I should never be sure that I could not get the grain cheaper by going to the next farm.

"Also, see how much simpler it is for the farmers and warehousemen to have a central market to which all the big buyers come. Without central markets of this sort, they might have to depend on their own efforts to find the best buyers. They would always

31. American packing concerns are establishing branches in South America. Why are they doing this?

32. Try to trace some of the ordinary commodities of life, like a shoe or a loaf of bread, through all of the different persons who cooperated in producing them.

33. Are the grocers' deliverymen among the cooperators in giving us a loaf of bread? Are the men who worked at paving the streets among them? Are the people who pay taxes among them?

34. Have you ever known of a strike? Did it affect you personally in any way? Can you think of any way in which a strike in some distant city would affect you? Would one on steamship or railroad lines? At what centers would a strike be of greatest importance to the whole country? Could there be a strike in the post office?

be in doubt concerning what their grain was worth. If I should offer a certain price, they could never be certain that another buyer would not offer a better one.

“Here in these central organized markets all of us, buyers and sellers alike, can form an opinion from the information at hand concerning the total amount of grain produced and the need which the consumers of the world have for it. In our bargaining and dickering here, then, a price is determined which is really based on the demands of the whole world and on the supply of the whole world. Any one who wishes to buy or sell wheat can find out what the best-informed buyers and sellers think it is worth merely by referring to the prices at which wheat sells here. These prices are quoted in the newspapers and are sent by wire all over the country. As a result, even the ordinary farmer gets the benefit of all this machinery for gathering information and can tell almost as well what his wheat is worth as these brokers or agents who specialize in studying and interpreting this information.

“It will be clear to you that this result could never be accomplished without the aid of a great many people and devices in addition to the ones you see here. Reports concerning the weather, the prospects of crops in other countries, the likelihood of peace or of war, flow in by mail, telegraph, and telephone. All the people connected with these agencies are thus cooperators in this enterprise.

“One other thing also is very important. No great activity like this could go on without clearly defined rules. When men buy No. 1 northern wheat, they must know what kind of wheat that means; they must know when they buy what obligations for payment they are assuming. The State government makes some of the rules, but a great many of them are simply common agree-

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35. Why are the various governments so anxious to prevent strikes in war times? Is it not as important to be free from strikes in times of peace?

36. From thinking over the preceding questions can you see what is meant by saying: “The public is a party to every strike.”

37. Ask some dealer what part of his expenditures go to advertising.

38. Are there, beside the retailers in your town, grocery jobbers? If so, try to find out what they do that is not done by the retailers. Find out whether the jobbers supply to different sections of your own town distinctly different grades of goods.

39. What is a savings account in a bank, and what other kinds of accounts are there?

ments among the brokers. In all matters the rules which the brokers make control them quite as strongly as the laws of the State."

"Yes," said John, "I think I see. I also see that if the farmers in Australia raise a big wheat crop, less American wheat will be needed abroad. That means that the Snow Flake Mill will buy it cheaper, and my mother's flour will cost less. Or a war in Europe will make flour cost more, because if they are fighting they can not be raising wheat or other food. And that means that even these people in Australia and Europe must be counted among the cooperators that produce my loaf of bread. Yes, and farmers, and elevator men, and grain brokers must all be counted in."

"You are right," said Mr. Walling. "It takes a great many people to turn out a sack of Snow Flake flour. Our milling company is just one little specialist in a great big cooperative system."

That evening John told his father what Mr. Walling had said about the bank, the board of trade, and the milling company as specialists in a great cooperative process. His father handed him a book and said, "Look this over; you will see that what you are learning about bread is true also of other things."

John noticed that the book was called "Wealth of Nations," and was written by Adam Smith. At a page which his father indicated he began reading:

Observe the accommodation of the most common artificer or day laborer in a civilized and thriving country, and you will perceive that the number of people of whose industry a part, though but a small part, has been employed in procuring him this accommodation exceeds all computation. The woolen coat, for example, which covers the day laborer, as coarse and rough as it may appear, is the product of the joint labor of a great multitude of workmen. The shepherd, the sorter of the wool, the wool comber or carder, the dyer, the scribbler, the spinner, the weaver, the fuller, the dresser, with many others, must all join their different arts in order to complete even this homely production. How many merchants and carriers, besides, must have been employed in transporting the

40. Find out from the bank what rate of interest the borrowers pay. Is this the same rate of interest that the depositors in that bank receive? Do all depositors receive interest?

41. Talk over the preceding question at home and see what you can learn about any other people or institutions that bring lenders and borrowers together.

42. Ask your local banker how many people have deposits in his bank. Ask him to show you a bank "statement" and to explain what the reserve is.

materials from some of those workmen to others who often live in a very distant part of the country! How much commerce and navigation in particular, how many shipbuilders, sailors, sailmakers, ropemakers, must have been employed in order to bring together the different drugs made use of by the dyer, which often come from the remotest corners of the world!

What a variety of labor, too, is necessary in order to produce the tools of the meanest of those workmen. To say nothing of such complicated machines as the ship of the sailor, the mill of the fuller, or even the loom of the weaver, let us consider only what a variety of labor is requisite in order to form that very simple machine, the shears with which the shepherd clips the wool. The miner, the builder of the furnace for smelting the ore, the feller of the timber, the burner of the charcoal to be made use of in the smelting house, the brickmaker, the brick layer, the workmen who attend the furnace, the millwright, the forger, the smith, must all of them join their different arts in order to produce them. Were we to examine, in the same manner, all the different parts of his dress and household furniture, the coarse linen shirt which he wears next his skin, the shoes which cover his feet, the bed which he lies on and all the different parts which compose it, the kitchen grate at which he prepares his victuals, the coals which he makes use of for that purpose dug from the bowels of the earth and brought to him perhaps by a long sea and a long land carriage, all the other utensils of his kitchen, all the furniture of his table, the knives and forks, the earthen or pewter plates upon which he serves up and divides his victuals, the different hands employed in preparing his bread and his beer, the glass window which lets in the heat and the light and keeps out the wind and the rain, with all the knowledge and art requisite for preparing that beautiful and happy invention without which these northern parts of the world could scarce have afforded a very comfortable habitation, together with the tools of all the different workmen employed in producing those different conveniences; if we examine, I say, all these things, and consider what a variety of labor is employed about each of them, we shall be sensible that, without the assistance and cooperation of many thousands, the very meanest person in a civilized country could not be provided, even according to what we very falsely imagine the

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43. Can you see any reason why a clothing merchant might wish to borrow money in the spring and autumn and could repay readily in the summer and winter?

44. Suppose a farmer wished to buy a carload of cattle in the fall, feed them all winter, and then sell them in the spring. Could he make use of the bank in the same way as the miller?

45. Can you find in the papers any statements that come from boards of trade? Who makes use of these statements in your town? Do the farmers use these statements in any way?

easy and simple manner in which he is commonly accommodated. Compared, indeed, with the more extravagant luxury of the great, his accommodation must no doubt appear extremely simple and easy; and yet it may be true, perhaps, that the accommodation of an European prince does not always so much exceed that of an industrious and frugal peasant as the accommodation of the latter exceeds that of many an African king, the absolute master of the lives and liberties of ten thousand naked savages.

"And that isn't all of it," said his father when John had finished. "My own work as a factory inspector illustrates another side. My business is to see that working conditions in factories are as good as the law requires. The law is, as you know, a set of rules that society has drawn up to govern the whole business. Many of the factories that I visit have conditions much better than the law requires. The owners are controlled far more by their own standards of right, and by the opinion of other people, their friends, or the public, than by law. But my work in this roundabout fashion aids in producing the bread or the coat. The State pays my salary, and the State gets the money from the taxpayers; so they all help in the process. Many laws about property rights also enter into the control of business. The men who made all these laws and the officers who administer them must be counted among the cooperators. Nor can we leave out the advertisers through whom many of these specialists tell others of their wares and persuade them to think they need these wares. This brings in all the newspaper and magazine workers, the writers, the circulation men, the typesetters, and press operators. The employment agencies and the men who operate them also have important duties. They bring together men and the demand for work. Schools have trained many of these people for their work. Physicians have kept up their health. Actors and ministers have given them recreation and encouragement. Policemen and soldiers have given protection and security. All of these, therefore, are among the cooperators and must be counted in whether we are talking about a loaf of bread, a coat, a shoe, a song, a sermon, a hairpin, or a battleship."

"Well," said John, "the more I see of this thing the more there is to see."

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## Chapter II.

### PRODUCTION AND WISE CONSUMPTION.

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The lessons in this chapter discuss the four factors in production, namely, (1) natural resources, (2) labor, (3) capital, and (4) organization.

Lesson A-4 takes the single example of an important geographic region and shows how the human life of that region depends on natural resources. Geographic influences determine the growth of cities within regions favored by nature. An analysis of the region in which the student lives, conducted in the manner indicated by this lesson, will add to his appreciation of geography and his understanding of social organization.

Lesson A-5 deals with the human factor in production. The labor force of a community depends upon the number of laborers and the efficiency of the individual laborer. Efficiency, in turn, depends upon health, mental and moral qualities, and social surroundings. Conservation of human resources is no less important than conservation of natural resources.

Lesson A-6 defines "capital" and shows the part that it plays in the life of a modern community. By the use of capital goods, the productive capacity of man is increased enormously, and the entire community is benefited.

Lesson A-7 shows that natural resources, man-labor power, and capital must be organized and properly correlated in order to reach the full measure of productivity. Organization may be through social control, or it may come as the result of the desire for gain. Men strive through the organization of their businesses to reduce production cost in order that profits may increase.

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#### LESSON A-4. WHAT NATURE HAS DONE FOR A TYPICAL CITY.

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We saw in our earlier lessons how many are our wants and how complex is the social organization that has grown up in the effort to supply these wants. The frontiersman with his simple life and direct methods of getting food has disappeared and a city has grown up on the site of his farm. Many of the people in the city never see the sources of their food and clothing and the other commodities which they use. We must go back in all of



our studies of complex modern life to the natural resources which underlie our civilization. Coupled with these natural resources are human energy and human ingenuity which work over the materials supplied and ultimately produce the things which we use. These facts may be expressed in technical terms by saying that production depends on (1) natural resources, (2) labor, (3) capital, and (4) organization.

"Natural resources" include climate, soil, mineral deposits, and the like. The term "labor" covers the efforts of people. In that connection we must inquire how efficient and capable people are. "Capital" includes physical aids to production, such as tools, steam engines, and factories. "Organization" means that all these must be assembled and well proportioned.

The process involved in utilizing natural resources, labor, capital, and organization so as to make goods available for use is called the process of production. Consumption means, in its narrow sense, the direct use of goods by people in gratifying their wants. In its broad sense it includes the use of one good, or set of goods, to make another.

We can not study the natural resources of all parts of the country. The single example of the northern Mississippi Valley will have to serve. This example ought to lead the student to a consideration of the conditions in other parts of the country which have led to the developments of the society which is found there. Special emphasis will be given in our discussion to the growth of Chicago as typical of its whole region.

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1. Notice what production means. Are the following enterprises productive: Cold storage, the express business, the mail service, a retail candy business, a railroad, farming, robbery?

2. In some districts settled by the frontiersmen no cities grew up. Explain why.

3. Show why the town in which you live is located where it is.

4. What is meant by the "hinterland" of a city? Point out on a map the boundaries of the hinterland of Chicago, of Boston, of New York, of San Francisco, of New Orleans.

5. If Chicago had been closely surrounded by ridges of mountains, could it have become a great city? Look at a map of Brazil and consider whether the interior region can readily be developed so far as transportation is concerned.

6. Notice on the map the network of railroads centering in Chicago. Find other cities in this country and in Europe with such a network. See if you can reason out why the network exists in each case.

## GEOGRAPHIC INFLUENCES EXPLAIN CITY GROWTH.

A great population has grown up in the northern Mississippi Valley. This growth is not without cause. It was provided for long in advance, and the influences at work were largely geographic. A city or a State grows great only in proportion as the region in which it is located is richly endowed by nature. If we look for elements of any region's greatness, we shall find them in one or all of the following: Advantages of location, surface, soil, and climate; in wealth of forest and farm; in mineral resources; and in the character and energy of the people.

Chicago, St. Louis, St. Paul, Minneapolis, Cleveland, Detroit, and other like cities owe their rapid growth to the fact that they are the natural transportation centers of a great low-lying, flat plain as large as half of Europe. In this plain there is no obstruction in any direction to the easy building of roads and railways. Already this region has the thickest network of railways on earth; Illinois alone has more than 10,000 miles of railway, and Chicago as terminus of 27 trunk lines ranks first in all the world as a railway center.

## THE GREAT CENTRAL PLAIN AND THE LAKES.

This great central plain, reaching from the Appalachians on the east to the Rocky Mountains on the west, was once an old sea bottom. It was uplifted bodily, and the limestones, sands, and muds of the old sea bottom have long been exposed to the atmosphere and have weathered down into very fertile soils. Then, too, over the northern part of this plain the ancient ice sheet of Pleistocene time has thrust its way, pushing off hill tops, filling

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1. What are the leading railway lines that radiate from Chicago? From New York? From Washington?
  2. Find out if there were any Indian trails passing through the Chicago region; through the Hudson and Mohawk valleys. Do railways ever follow old Indian trails? Do highways?
  3. How were our clay beds formed? How were coal deposits formed? What is limestone? Describe the formation of soils from erosion.
  4. Point out on the map the regions in North America which were affected by the ice gap.
  5. Do you know of any regions other than that of the great central plain which have been lifted up from being an old sea bottom? Do you know of any regions which have been depressed?



transverse valleys, and leaving a veneer of the finely ground rock débris gathered from a journey of a thousand miles down from Canada. This glacial soil, not yet leached out by the rains of ages, is rich beyond compare.

The Great Ice Sheet was responsible also, in large measure, for scouring out basins for the Great Lakes and building here and there dams of tumbled rock débris. The Great Lakes are as important to the building of the cities near them as the plains that extend from the lakes to the south and west.

#### VARIED MINERAL DEPOSITS.

This region is greatly blessed in its mineral resources. There is an endless wealth of clays of river and lake deposition and of glacial origin, making easy the manufacture of brick and tile. There are also extensive deposits of clays of the old sea bottom, and of the ancient marshes of the Age of Coal, clays of so fine a quality as to make possible the highest development of the fictile arts.

Then the limestones and sandstones of the ancient sea bottoms provide a wealth of building stones and abundant materials for making cement. Some of these limestones in Wisconsin, Iowa, and Illinois carry rich deposits of lead and zinc.

The old lands of the Lake Superior region have fabulous wealth in iron ores. Deposits so extensive and of ores so rich that the ore lies like red dirt, to be scooped up by steam shovels and carried by lake steamers at the lowest freight rates ever known to the waiting coal fields and markets at the other end of the lakes.

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1. "The influence of the iron industry on civilization can hardly be overestimated." Give the grounds for this assertion.

2. "One type of interdependence in our society to-day is seen in the dependence of one industry on another." Give at least six illustrations of this type of interdependence.

3. "Ability to produce food cheaply in a region will mean a rise of manufactures if other conditions are at all favorable." Why have manufactures arisen in the Chicago region?

4. "The prevailing southwest wind would leave the Chicago region a desert were it not for cyclonic storms." Why?

5. Describe regions that contrast with the central plain in that they are crossed by barriers. What effect do the barriers have on climate? What effect on industry?

6. Get some weather maps and confirm the statements made in the text about storms.

These great Superior fields produce four-fifths of all the American iron ore, and America is producing over one-half of all the world's iron and steel.

But best of all the material advantages after the rich soil is the resource of coal in the central plain. A great coal field lies under the soils in a number of the States in this region. The beds of coal, undisturbed by earth movements, lie approximately horizontal to the earth's surface and at a small depth. This makes mining easier and cheaper than in any of the coal fields of Europe. It is estimated that in Illinois alone there are 45,000,000,000 tons of workable coal. For some years the annual output of Illinois has exceeded 60,000,000 tons, an amount greater than the total consumption of France or Japan. With coal the iron and steel industries flourish. So also do all the multitude of manufactures growing out of these metals and out of the cheap power made possible by the use of coal.

#### THE INFLUENCE OF CLIMATE.

It is of the greatest significance in a climatic way that the central plain stretches out to east and south without a trace of a barrier against the passage of wind and rain. An endless procession of cyclonic storms passes across our country. Each storm which passes through the central plain draws in toward its center the warm moist air from the Gulf of Mexico and drops the moisture as rain, as the storm travels eastward down the St. Lawrence Valley toward its goal at Iceland. The result is that this region has rain well distributed through the year. Further-

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1. Explain why the conditions described in the text are favorable to mining.
  2. Reference is constantly made to the desire of the Germans to possess rich coal fields. Where are these fields that they want?
  3. Give examples of industries peculiarly dependent upon gravitation, rain, wind, sunshine, tide, moisture, temperature, qualities of soil.
  4. Can you find any evidences that the location of certain industries to-day points back to the time when forests were abundant in the north Mississippi Valley?
  5. Would it have been wise to prevent the destruction of the forests? How could they have been utilized more wisely? Where are forest belts to-day? What is happening to them?
  6. The presence of water power is an important natural resource. Do you find this resource in the Chicago region? Where are some important water-power locations?

more, days of rain alternate with days of clear skies and sunshine. These are the weather conditions ideal for forest, grass, and the cereal crops.

Because of the character of the climate, a great hardwood forest once spread over the plain from Illinois to the eastern sea. A broad zone of conifer forest lay along the upper Great Lakes, and extended from western Minnesota eastward to the Maine coast. This forest was the greatest white-pine area on earth, and the rivers and lakes, and the intense cold and heavy snows of winter all contributed to an easy exploitation of its wealth of lumber. For many years this was one of the greatest lumber-producing areas in the country. Industries dependent upon wood flourished. These forest areas now are largely denuded of their timber, but while they lasted they contributed to the wealth of the people in this region.

#### A RICH AGRICULTURAL REGION.

The great low plain, smooth of surface as a plain can be, covered with a soil of matchless fertility and supplied with a climate ideal for all the great dry-land cereals, corn, wheat, barley, oats, rye, millet, and the lesser grasses and forage crops, makes this area a farming land without an equal. The wealth production of its farms makes the values growing out of all the mineral resources of the country look small indeed by comparison. These rich farm lands have attracted a great population of intelligent farmers. The smooth surface of the land and the fine soil have made very profitable the use of a wide variety of labor-saving farm machinery. The consequence is that the staple cereals are produced at a lower cost than in any of the older lands.

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1. "It is an interesting fact that England's difficulty in feeding her people in this present war arises in large degree from the settlement of our west." How can this be true?

2. Do you know of any regions where the natural resources are so limited that people can not readily get the means of living? What kind of people live there?

3. What are some of the other rich agricultural regions on the North American continent? In Europe? On other continents?

4. For the people of a certain region to have a good living, is it necessary for the natural resources of that very region to supply them with all the things they use?

5. Give some of the improvements which have come in agriculture through the construction of farm machinery.

For example, corn, the king of all the cereals, grows here at its best. The country's total yield of corn is over 3,000,000,000 bushels per year, valued at the farm at nearly \$1,500,000,000, at prices which ruled before the present war began. Three-fourths of this tremendous crop is produced in the "corn belt," reaching from Pittsburgh to central Kansas and from southern Minnesota to the Ohio River. This corn crop produces the largest annual increment of wealth in the country. And this great value is for the corn itself before it has been transformed into higher-priced commodities, such as beef or butter, lard or bacon.

What is true of corn is true also of wheat. The annual production of this crop in the entire country has passed a billion bushels, worth a billion dollars at the farm at ante-bellum prices. Though the city of Chicago does not produce the wheat, it derives much of its wealth from this crop. Wheat is produced west of Chicago, and wheat travels widely, for the place of its largest consumption is in the densely populated Eastern States and the manufacturing populations of Europe. For this reason Chicago, being on the way to market, has become one of the world's greatest wheat-buying centers.

For oats, rye, and barley, for timothy, clover, and alfalfa a similar tale may be told, to say nothing of potatoes and other root crops. And most of these crops are the starting point for the raising of cattle, sheep, and hogs, and the industries which use them. The corn belt is the hog belt of the country, and the major part of all the cattle in the country is in this same region. A network of railways brings these animals in great numbers to the stockyards in Kansas City and Chicago and other cities, and this swells the wealth production of these cities. For a number of years the packing industry of the stockyards of Chicago has

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1. Find out as many uses as you can which are made of corn.
  2. The prices given are those which prevailed before the war. Explain some of the reasons why prices have gone up.
  3. The lesson speaks of the value of corn at the farm. Would its value be higher in a city? If so, why? It is the same corn; perhaps it has even deteriorated in transit.
  4. In an earlier lesson the wheat pit was described. Why is the chief market of this type in Chicago?
  5. The crop of corn for 1917 was larger than that mentioned in the text. Find out how much larger. Why was it so?

been the greatest industry of the city, with an output valued at over \$1,000,000 a day for every day in the year.

#### THE DAIRY INDUSTRY.

Another phase of the cattle industry is the dairy business. West and north of Chicago, climate, soil, grass, and feed are at their best, and the butter center of the whole country is at Elgin and Chicago. Wisconsin, Iowa, and Minnesota have come to the front in making cheese. For nine consecutive years northern Minnesota has taken the first prizes in all the country in making butter, and Wisconsin has almost as good a record in cheese making. These dairy products and the milk that is sold direct to the city, and the milk that is condensed or desiccated and put into cans for wider use, reach a value in the Chicago region of over \$500,000,000 a year. The producers of this wealth are also large buyers of the goods Chicago has to distribute.

#### THE TRANSPORTATION ADVANTAGES OF CHICAGO.

Peculiar advantages in the control of commerce are conspicuous factors in the making of Chicago. In all the past century there has been a strongly marked development of east-west moving traffic. The world's greatest highway of trade lies between Britain and four great ports on the northeast coast of America; but a goodly portion of the goods we export to Europe originates in the Chicago region, and Chicago is on a direct extension of this great world highway.

One-half of all the foreign trade of our country goes and comes by way of the port of New York. Physically there is no better

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1. In earlier days, the center of the packing industry was in Cincinnati. Later it moved to Chicago. Now much packing is done in St. Louis, Kansas City, and Omaha. How do you account for the westward movement of this industry?

2. When was the Erie Canal built? Look at the map and see if you would expect the building of this canal to hasten the settlement of the State of Michigan.

3. Suppose you were going to establish a mail-order house. Would Chicago or Key West, Fla., be a better location? Tell why you answer as you do.

4. The lesson speaks of the east-and-west traffic which has been characteristic of the last century. Are there conditions making for north-and-south traffic?

seaport in all the world than New York. In addition to this good harbor New York has a great advantage over her rivals, Boston, Philadelphia, and Baltimore, in the fact that the Appalachian highland handicaps their traffic with the west. New York, on the other hand, has ready access to the west through the trench of the Hudson and the pass of the Mohawk. So far as westward traffic is concerned there is for New York no Appalachian barrier. The advantage does not end here, for the gateway of the Mohawk opens directly into the broad flat valley of the St. Lawrence, with its marvelous chain of Great Lakes, virtual inland seas. The Mohawk pass is so flat as to have made possible the early development of the Erie Canal. The canal, the Great Lakes and the Hudson River have furnished an all-water route between Chicago and the sea. The easy grades later facilitated the construction of railway lines and the competition of the rail and water lines has resulted in the lowest freight rates on record. This has, of course, benefited Chicago.

Notice, again, how significant it is that in an era of east-west traffic Lake Michigan interposes 300 miles of deep water directly athwart the potential land routes leading westward from the Mohawk pass. Such a barrier caused the land traffic of the

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1. The Hudson and Mohawk Valleys make a great highway to the west. What other highways to the west have played a prominent part in our history?

2. We say land renders a service in production by being a storehouse of materials. Give as many illustrations of this as you can.

3. We say land is a storehouse of forces. Cite illustrations.

4. What properties of land are of special importance to the lumberman? The miner? The manufacturer? The fisherman?

5. Can you cite specific ways in which natural conditions have affected the industry of Michigan, Greenland, Egypt, Central America?

6. The lesson shows the importance of natural resources. We hear much of conservation of natural resources. What does this mean? Does it mean that they should be used as little as possible?

7. Some one has said that one cause of the development of cities is the presence of a "break in transportation." Would this help explain the growth of New York? Of Chicago?

8. Is land necessary to all production? How about the services of a domestic servant?

9. It has been said that land aids in production by serving as a means of physical support. What does this mean? Does it apply to all industries?



country west and northwest of the lake to bend around its southern extremity. This concentration of transportation lines alone would have been enough to guarantee the growth of a great city somewhere in the region. The position of the Chicago River at the head of the lake, furnishing a harbor and a direct water route to the Mississippi River, provided the exact location of the metropolis.

A great network of railways, like a giant spider's web, with its long rays reaching out from Chicago in all directions, invites the freight for a thousand miles to focus at Chicago on its way eastward and in turn makes Chicago the merchandising headquarters for the area. So far as the possibility of radiating railroads is concerned other cities are perhaps as well placed as Chicago. Chicago's advantage lay in the fact that she could always choose between traffic carriers. The supremacy of Chicago as a freight center is thus traceable to the possession of a continual choice between the service of the railway and the service of the Great Lakes.

The presence of all these natural resources has had a direct effect on the population other than merely to bring together great numbers of people. Young, vigorous men and women from all parts of the world have been attracted by the opportunities which are presented by a new, rich country which must be opened up through the establishment of new industries.

The study of natural resources thus carries us over directly to the discussion of the human factors in production and from this we shall go on to a discussion of the physical aids, or capital, used in production and then to a discussion of organization.

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LESSON A-5. THE HUMAN RESOURCES OF A COMMUNITY.<sup>1</sup>

The preceding lesson showed the contribution made by natural resources to production. Since land is the chief of the natural resources, the writers on these subjects usually use the term "land" to cover them all. Now let us see how important a part labor plays in production and what conditions will give a community an adequate labor force. The expression "efficient people" would serve almost as well as "adequate labor force" here, for labor in a broad sense means both mental and physical human effort. As thus used the term "labor" includes the work of professional men and business managers as truly as it does that of machinists and farmers.

## EFFICIENCY OF LABOR.

The labor force of a community depends first on the number of laborers and second on the efficiency of each individual laborer. The matter of numbers requires no special discussion. The matter of efficiency is more difficult to understand, for the efficiency of an individual is made up of many factors and each of these depends upon many others. First of all, efficiency depends upon health and strength. These require that the individual shall have good heredity, good and sufficient food, sanitary surroundings, protection from disease and accidents, good amusements, and much else of the same type. Efficiency depends further on the individual's mental qualities, his alertness, his ability to think, his training. In the third place, efficiency includes what may be called, in general, moral qualities, as honesty, sobriety, willingness to work, and persistence. The strongest, best-trained workman may be inefficient because of undesirable personal habits or because he can not be depended upon to work regularly or steadily. Finally, the efficiency of the individual is much influenced by his social surroundings. For example, a man living in a community which is thriving and successful will do more work and better work than an equally able individual who lives in a backward, discouraged community.

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<sup>1</sup> The material for this lesson was supplied by Ruth Reticker, of the School of Commerce and Administration of the University of Chicago. The lesson deals with the importance of the human factor in production and gives examples to show the wisdom of conserving human resources.



## THE EXAMPLE OF HAITI.

The importance of an efficient labor force and the significance of mental and moral qualities is well shown in the history of the little West India island country of Haiti. This example is chosen because it is a much clearer case than any that can be found in larger and more complex communities. When the principles are understood in terms of a relatively simple, clear-cut example of this kind they can be applied in other cases where they are obscure because of complicating circumstances.

Haiti was the third point of land which Columbus discovered in America and the first Spanish settlement in the New World. The Spaniards opened up mines, cleared the fields, and introduced sugar-cane culture. When the natives were exterminated, they were replaced by slaves imported from Africa. The settlement flourished. Centuries later, when the Spaniards went on to Mexico and South America in their search for gold, the rich island was eagerly seized by the French.

Because of the great fertility of the soil it became the "richest gem of the Bourbon crown." The planters lived in luxury while the work of the fields was done by slaves, 500,000 of them. The children of the French owners were sent abroad to be educated; the slaves were trained only for menial tasks and no adequate effort was made to educate them or improve their social condition.

The French did not realize the fact, but their neglect of the slave population was undermining the powers of production on which the wealth of the island depended. The rich soil and favorable climate were not enough to insure continued prosperity. The human factors were deficient. When trouble broke out in France in the period of the French Revolution the hold that the

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1. Draw up a definition of labor as that word is used in this lesson. Cite 10 cases of physical labor; 10 of mental labor.

2. What matters can you think of as contributing to health and strength which are not mentioned in the text?

3. Who looks after the health and strength of people? Do parents? Do factory owners? Do school authorities? Do city authorities? Do others? If these persons do look after the health and strength of people, why do they?

4. What do you understand by mental qualities? By moral qualities? Who looks after the mental qualities of people? Who looks after the moral qualities?

5. What is a caste system? What bearing has a caste system on the efficiency of labor?

planters had on the island was weakened and the social scheme based on slavery crumbled. The island was finally left in the hands of an untrained slave population. They had expelled their masters but were themselves unprepared for self-government.

The circumstances of the overthrow of French rule are dramatic. Toussaint l'Ouverture, a slave, had secured something of an education. He assumed leadership and attempted to work out with his own people order and a stable form of government. He was finally captured by the French, who were seeking to retake the island, and after he was taken away disorder ruled supreme.

#### AN EXAMPLE OF INEFFICIENCY.

The subsequent history of Haiti is a very striking example of the need of moral and mental qualities in the people who are to develop a community. The orderly, productive life of a prosperous people is not always recognized as depending on these human virtues, but when they are absent chaos reigns.

So it was in Haiti. The people and their leaders were ignorant. Some of the Presidents could not sign their names. Ignorant leaders made the mistake of trying to exploit the public for personal ends. There was a continual conflict. Just how great was the political instability may be seen from the fact that 12 of the first 17 rulers either were assassinated, deposed or exiled, or committed suicide or abdicated in the face of trouble. Meantime there was, of course, commercial and economic deterioration. The slave had no sufficient impetus to work, now that the lash of the overseer no longer hung over his back. The system of slavery had fostered no real habits of industry and foresight. Haiti's wild fruits and other tropical resources made it easy for men to live without work as well as they had lived under slavery. The island

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1. Can you see any reasons why it is worth while for our States to provide education at public expense? What are some of the courses in your school that you think are especially helpful in training students to do efficient work after they leave school?

2. Do employers do anything to improve the social surroundings of their workers? If so, is it done because it is profitable or for some other reason?

3. What does slavery mean? Have we ever had slavery in the United States?

4. Show why the institution of slavery is not likely to develop in slaves the mental and moral qualities which make for progress.

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fell back into semibarbarism. How serious the commercial deterioration was may be seen from the fact that in 1791 the exports of sugar, coffee, cotton, indigo, sirup, cacao, hides, wood, etc., amounted to \$40,000,000 and 100 years later to only \$14,000,000.

The correspondent of a London newspaper who visited the island in 1900 tells us something of conditions then:

In the time of the French colony, the plain of Cul-de-Sac contained many flourishing plantations yielding 20,000,000 francs a year; now you see only ruined walls matted with vegetation, a few irregular patches of corn, a few clumps of Guinea grass about each solitary palm-thatched hut, and mangoes, bananas, tamarinds, and coffee berries growing wild. The very sugar-boiling pans of 100 years ago lie rusting, and in these evidences of a bygone prosperity the lizard has its dwelling place. It is the same all over Haiti, wherever you go. All that savors of industry, energy—civilization in short—has been and is not. All that the French and Spanish left behind as milestones on the paths leading up out of sheer savage waste and idleness, is obliterated. As far as the interior is concerned, the situation in the present day is retrogression with regard to the human element and retrocession to the forest powers of once cultivated lands.

A striking example of how an inefficient and untrained population slips back in the productive struggle is seen in the consequences to Cape Haytien of a tremendous earthquake in 1842. In the old French days this town was a center of luxury and fashion. It was called the "Little Paris" of the west. The earthquake did great damage and the inhabitants were too inefficient to make any effort at restoration. "Wherever you walk you are among old ruins, ruined houses, ruined aqueducts, ruined fountains of stone, ruined walls, ruined forts, overgrown knee-high. Among

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1. Why do unsatisfactory mental and moral qualities in a people make it difficult for them to maintain satisfactory social conditions? What do you mean by satisfactory social conditions?

2. Cite some social conditions in the United States which promote efficiency in its workers. Cite some that lower efficiency.

3. Have amusements any relation to individual efficiency? Have public parks? Bathing beaches? Churches?

4. It is well known that in a country where political conditions are unsettled, where rioting, robbery, and murder are prevalent, factories are not likely to be built, and trade and commerce languish. Why?

5. The expression "social and economic progress," is often used. Have we made social and economic progress in the past 100 years? What proofs can you present?

them have cropped up the wooden dwellings of the present masters of the land like a sparrow's egg laid in the deserted nest of an eagle."

#### AN EXAMPLE OF EFFICIENCY.

A vivid contrast to this story of Cape Haytien appears in the restoration of San Francisco after the earthquake and fire which in April, 1906, destroyed one-sixth the area of the city and made 200,000 people homeless. Reconstruction began immediately. With the advice of landscape architects from other cities, ordinances were passed prescribing methods of construction. Committees were appointed to provide for such matters as water supply, fire protection, municipal buildings, parks, and boulevards. A new street plan was drawn up to make the hills of the city accessible as they had not been with the old system of rectangular blocks, and to make certain streets wide enough to divide the city into fire districts. Within six months the streets were almost cleared of the débris; thousands of temporary stores and homes had been erected and excavation was under way for hundreds of big buildings. The schools began only one month late the next fall. In the four years following the disaster 27,000 building permits were issued and more than \$173,000,000 was expended in buildings. Within five years restoration was not only complete, but the city was better planned and better built than before the disaster.

#### THE LESSON FROM THE CONTRAST.

These stories of Haiti and San Francisco show clearly how important efficient people are in the struggle with nature to get goods to apply to our wants. The Haitians had abundant natural

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1. It is generally said that San Francisco is better organized for production than it was before the fire; that in the long, long run it may develop that it was a gain to have it destroyed. What are the arguments back of this position? Do you think they are sound?

2. A storm breaks many of the windows in your house. Does replacing these windows give increased employment to labor? Would the money involved have been spent in other ways if the storm had not occurred? Did the destruction of San Francisco give increased employment to some kinds of labor? To all kinds?

3. How does the rebuilding of San Francisco show the importance of specialists in our modern life? Mention as many specialists as you can who would be particularly useful in such a crisis.

resources. There is no evidence that they lacked health and strength. There is clear evidence, however, that they were lacking in energy, determination, thrift, foresight, ability to plan, and power of clear thinking. These mental and moral qualities can be cultivated only through generations of attention to the cultivation of human virtues. Without them even the richest natural surroundings will not make a strong and wholesome state or a people supplied with the comforts and advantages of modern civilization.

#### THE PRINCIPLE OF EFFICIENCY.

The story of San Francisco furnishes a gratifying contrast with that of the backward island. The two examples taken together make clear the principle that production depends on human qualities as well as natural resources. It would be a mistake to believe, however, that the case of San Francisco marks the climax in the application of this principle. In better organized communities, as well as in those of lower grades, there is a constant demand for emphasis on training and industry and physical and moral stamina.

#### WASTE OF HUMAN RESOURCES.

We hear much of the desirability of conservation of our natural resources. It is more important, however, that we learn to conserve, or bring to its highest possible level, our human resources, our labor force. In order to see the nature of the problem involved in a wiser use of our human resources, let us enumerate some of the cases in which these resources are to-day wasted.

Think first of the too numerous persons who are deliberately working contrary to society's best interests. We call them crimi-

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1. Can you determine which is more important, natural resources or labor? Moral qualities or mental qualities? Individual health or good social conditions?

2. The lesson gives some illustrations of persons who are destructively employed. Name as many other cases as you can.

3. Are soldiers in the present war comparable to the police and constables mentioned in the lesson? Is war a productive occupation?

4. Cite other cases than those mentioned in the text of persons being "improperly employed."

5. Is waste of labor power involved in (a) the care of the sick; (b) the care of persons too young to work; (c) the care of persons too old to work; (d) compulsory school attendance; (e) premature death; (f) debauchery?

nals. They steal, burn, kill, and destroy. Sometimes we speak of them as being "destructively employed." They contribute nothing to our cooperative efforts toward improvement. Nor is that all. The necessity of dealing with such people withdraws a considerable portion of the labor force of the community into protective agencies of various sorts. We have policemen, constables, magistrates, and jail keepers. These protectors are necessary to-day. They render us good service. It is unfortunate, however, that protection is necessary. If it were not, our protectors could be freed from their present tasks and made available for positively productive lines of activity.

Think next of the part of our human resources that are "improperly employed." The most striking illustration of improper employment is that of child labor. Although our States and our Federal Government are doing a good deal to regulate this evil, it still remains true that in some communities children are put at hard work in factories. These children are improperly employed because the hard toil dwarfs their bodies and makes it impossible for them to secure any education except the narrow education of the mill or factory. When such children grow up they are less efficient than those who have had better opportunities. They lack desirable mental qualities and very frequently they lack desirable moral qualities. They get low wages, and this is likely to mean that they in turn will not be able to give their children a chance to grow up into efficient men and women. "Improper employment" is a very wasteful way of using our human resources.

There is also a waste of human resources which comes from preventable accidents and sickness. Modern factory industry, at its

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1. What is society doing to prevent improper employment? Do you know any official who is connected with this work?

2. Why is it that modern factory industry is more dangerous than the work of the colonial household? Is it because men are more careless to-day?

3. Is it merely machine industry which is dangerous? Is chemical industry dangerous? If it is, can you name any specific dangers of chemical industries?

4. Find out how many men were killed and wounded at the Battle of Gettysburg or during the Spanish-American War. How do the figures compare with one year's deaths and injuries through industrial accidents?

5. A recent investigation showed that deaths from tuberculosis amounted to 36 per cent of all deaths among stonecutters and to but 6.2 per cent among workers on farms. What is the reason for the difference? Can the situation be remedied?



very best, means for the workers some accidents. When such industry is not at its best it means many accidents and much sickness. We shall learn more of this in a later lesson. How serious the situation is may be seen from the fact that in the United States in 1913 the number of fatal industrial accidents was estimated conservatively at 25,000 and the number of industrial injuries involving a disability of more than four weeks at approximately 700,000. In addition to these accidents there was much so-called industrial disease.

Industrial accidents and sickness reduce our human resources either temporarily or permanently, and in addition they sometimes cause us to turn other human resources aside from productive pursuits to care for the sick and the crippled. To the extent to which these industrial accidents and sickness are unavoidable, we just must make the best of it. To the extent to which they are preventable, we must prevent them.

A fourth waste of our human resources comes about through "imperfect employment," which means that although a given person is usefully employed he is not employed at the thing he could do best or which society needs most. He is a misfit, perhaps by chance, perhaps by lack of opportunity or training, perhaps because of bad advice given him. Whatever the cause he is an example of a partial and hence unsatisfactory use of human resources.

#### THE WASTE OF UNEMPLOYMENT.

Great waste of human resources results when people are unemployed either because they are voluntarily idle or because they are unable to find work. The voluntarily idle are to be censured. We are quick to see this in the tramp, but after all his case is somewhat similar to the case of the idle rich man. Both possess human resources which are needed by society and both fail society in its need.

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1. We hear much of vocational guidance. What bearing has vocational guidance on the matters raised in this lesson?
  2. Because of a strike 3,000 workers are idle. Is this a case of unemployment? Is it a case of a waste of human resources? If it is, is there any defense for a strike?
  3. Many States set up employment bureaus. How do such organizations fit in with the problems raised in this lesson?
  4. The lesson speaks of some cases of unemployment in which the individual is at fault. Name some such cases.

The persons unemployed because they are unable to find work constitute a more difficult problem. Sometimes the cause of the unemployment is lack of efficiency on the part of the individual. Sometimes the individual is to blame for this situation; sometimes others are at fault. More frequently the cause of unemployment is to be found not in the individual but in some defect in the organization of industry. At present the unemployment evil may not seem to you serious. The demand for products is very great and industries are eager for workers. In other years, however, it has not been unusual for 10 per cent of our workers to be unemployed and in addition 15 per cent to be only partly employed. This is a serious waste and it is not surprising that many students are studying the structure of our society in the effort to see how such a loss may be avoided.

#### PREVENTABLE SICKNESS.

The preventable sickness which results from poor conditions in industry is further increased by lack of proper sanitary conditions in the home and lack of wise care of one's own powers on the part of negligent and ignorant people.

There will always be sickness, but we are speaking here of sickness which foresight might have prevented. It is impossible to estimate fully the unhappiness and loss which come to individuals and countries from such sickness. It is possible to get attention perhaps to this loss and waste by using financial terms. One authority has estimated that the actual economic saving annually possible in this country by preventing needless deaths, needless illness (serious and minor), and needless fatigue is certainly far greater than \$1,500,000,000 and may be three or more times as great.

#### SUGGESTED REMEDIES.

A report issued by the National Conservation Commission in 1909 makes among others the following recommendations:

The National Government, the States, and the municipalities should steadfastly devote their energies and resources to the protection of the

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1. What is meant by speaking of a defect in the organization of industry?

2. If, as a result of laziness, lack of education, or lack of opportunity, a capable man is working in a trade for which he is not suited, are you and I affected by that fact? Explain your answer.

3. What judgment, considering the matter from the point of view of production, is to be passed on an idle rich man? Is it upon the whole fortunate or unfortunate that there are such people in society?



people from disease. The National Government should prevent transportation of disease from State to State in the same way as it now provides for foreign quarantine and the protection of the Nation from the importation of disease by foreign immigrants. It should enact suitable legislation providing against pollution of interstate streams. It should provide for the dissemination of information in regard to the prevention of tuberculosis and other diseases, the dangers of impure air, impure foods, impure milk, imperfect sanitation, ventilation, etc. There should be a constant adaptation of the pure-food laws to changing conditions.

State boards of health and State legislation should provide for the regulation of labor of women, should make physiological conditions for women's work; should regulate the age at which children shall be employed, make reasonable regulations in regard to hours of labor and against the dangers in hazardous trades, and especially against the particular dangers of dust and poisonous chemicals.

More legislation should be advocated, passed, and enforced to the end that streets may be kept clean, garbage properly removed, sewage properly disposed of, air pollution of all kinds prevented, whether by smoke, street dust, noxious gases, or any other source. Noises also should be lessened.

Municipalities need also to take measures to prevent infection being carried by flies, mosquitoes, other insects, and vermin. They need to guard with greater care the water supply, and in many cases to filter it; they should make standards for milk purity and enforce them; they should also regularly inspect other foods exposed for sale.

School children should be medically inspected and school hygiene universally practiced. This involves better protection against school epidemics, better ventilation, light, and cleanliness of the schoolroom, the discovery and correction of adenoids, eye strain, and nervous strain generally, and the provision for playgrounds. Sound scientific hygiene should be taught in all schools, public, private, normal, and technical, as also in colleges and universities.

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LESSON A-6. CAPITAL.<sup>1</sup>

It has been shown in the preceding lessons that communities grow up where there are natural resources and that their prosperity depends on the cultivation of personal qualities which make them productive and wise in the use of these resources. We turn now to a study of a series of facts which are of special importance in explaining modern civilization. We live in an age which has accumulated a great deal of so-called capital. Men have found through long generations of slow, painful experimentation that they are able to increase their powers and to utilize them to better advantage by means of certain physical aids called "capital." Capital is a hard word to define accurately, but it will suffice for our present purposes if we remember that the term embraces such things as tools, machines, and the raw materials with which to work.

## ADVANTAGES OF ROUNDABOUT PRODUCTION.

The part played by capital in production has been very well illustrated by a German writer, Eugen V. Böhm-Bawerk. This is the illustration he uses:

A peasant requires drinking water. The spring is some distance from his house. There are various ways in which he may supply his daily wants. First, he may go to the spring each time he is thirsty, and drink out of his hollowed hand. This is the most direct way; satisfaction follows immediately upon exertion. But it is an inconvenient way, for our peasant has to take his way to the well as often as he is thirsty. And it is an insufficient way, for he can never collect and store any great quantity such as he requires for various other purposes. Second, he may take a log of wood, hollow it out into a kind of pail, and carry his day's supply from the spring to his cottage. The advantage is obvious, but it necessitates a roundabout way of considerable length. The man must spend, perhaps, a day in cutting out the pail; before doing so he must have felled a tree in the forest; to do this, again, he must have made an ax, and so on.

There is still a third way; instead of felling one tree he fells a number of trees, splits and hollows them, lays them end to end, and so constructs a runnel or rhone which brings a full head of water to his cottage. Here, obviously, between the expenditure of the labor and the obtaining of the water we have a very roundabout way, but then the result is ever so

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<sup>1</sup> Prepared by Dean L. C. Marshall. The lesson indicates by means of examples something of what is meant by capital and shows in an introductory way the part played by capital in the life of a modern community. Later lessons will work out this subject more fully.

much greater. Our peasant needs no longer take his weary way from house to well with the heavy pail on his shoulder, and yet he has a constant and full supply of the freshest water at his very door.

Let us look at still another example of the use of capital goods. I have on my land a huge rock, and I wish to take it from its present location, break it up, and apply it to the improvement of a highway. With my naked hands, I can accomplish practically nothing. I might do something with simple tools, such as a crowbar, a sledge hammer, and a small cart.

If, however, the magnitude of the task justifies it, I can do still better. I can take steam power and explosives, which are nothing but natural forces that I have harnessed to help me in production, and with them, by the use of appropriate implements, I can easily drill holes in the rock, break it up with a charge of explosives, lift heaps of stone by the use of a derrick, crush the stone with a crushing machine, and then transport it to the highway by means of a railroad. Once these devices have all been perfected and brought together, a very large quantity of crushed stone can be put on the highway every hour. They represent, it is true, a roundabout way of production. Much preliminary work had to be devoted to getting them ready for use. But this preliminary work results in great productive capacity.

#### WHY IT IS ADVANTAGEOUS TO USE CAPITAL.

If we look back over these illustrations, we see that tools and machines assist us in production in a number of ways. In the first place, some of these physical aids enable us to harness forces of nature, such as those of wind, water, steam, electricity, chemical

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1. Does the peasant really get his supply of water with less effort expended per gallon by resorting to the roundabout method of production? If so, why? Remember that he had to work hard on the runnel.

2. "The roundabout process of production is not merely an efficient method of production. It is sometimes the only possible method by which to get goods we use to-day." Cite cases.

3. As you think over what is meant by roundabout production, should you say that the time of the productive process involved in making a suit of clothes is longer or shorter than it was in the colonial days?

4. Capital has been classified as free and specialized. Free capital is illustrated by goods which may be used for many purposes; specialized capital, by those which can be used for but one purpose. Give five illustrations of free capital; give five illustrations of specialized capital.

action, and gravitation. These forces are giant forces, and when they do our bidding we can produce great quantities of goods.

In the second place these physical aids enable us to concentrate greater forces on a given point at a given time. Think, for example, of the power of the steam hammer. Of course, enough people could be assembled and equipped with sledges so that the sum total of the blows they could strike over a considerable period of time would equal one blow of a steam hammer, but it is clear that so great a number of people could not exert this total force on a small point at one instant of time.

In the next place it is noteworthy that these physical aids enable us to utilize to better advantage our own powers. All of us have seen illustrations of this in the use of the lever, the pulley, the wedge and the screw.

Fourthly, these physical aids enable us to direct efforts more perfectly than would be possible without them. Machinery works with a certainty and regularity that the human arm or eye can not equal.

Finally, it is worth noting that machinery makes possible greater continuity of effort than would otherwise be possible. A machine is tireless. Its wood and iron know no fatigue; they are very different from man's body, which is quickly fatigued and must have rest periods for recuperation.

#### CAPITAL IN AGRICULTURAL PURSUITS.

Some idea of the tremendous increase in productive capacity resulting from the use of machines can be gained from an interesting computation which has been made concerning the effect of

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1. Capital has been defined as wealth devoted to the further production of wealth. Consumer's goods have been defined as goods immediately available for personal use. Is pig iron capital? A railroad? Candy on the shelves of a retail dealer? Candy in your hand? Coal?

2. Make a list of things which are clearly capital. Make a list of things which are clearly not capital. Will you put labor in this second list?

3. Draw up a list of ways in which capital aids in production.

4. Does capital (for example, freight cars, machinery, and coke) really replace itself? Does it make possible its own replacement? If so, in what ways?

5. Since capital is such an aid in production, how do you account for the fact that they used relatively little capital in the Middle Ages? Why is there relatively little among savages?

farm machinery upon crops. An economist, Mr. H. W. Quaintance, computed the quantities of several crops which were produced in a given year under machine methods and then computed the quantities which the labor-power used in connection with these machines could have produced had this labor-power raised these same crops by hand methods. He concluded that about 95 per cent of the crop of wheat could be attributed to the machine, about 89 per cent of the crop of oats, and 81 per cent of the crop of hay. He summed up his investigations in the statement that the increase of effectiveness of man-labor power when aided by machinery varied from 150 per cent in the case of rye to 2,244 per cent in the case of barley. When we bear in mind that machine industry does not play as large a part in agriculture as it does in many other pursuits, we get some appreciation of what man owes to machines.

#### THE MAINTENANCE AND INCREASE OF CAPITAL.

It is clear enough that it is important for a community to have a supply of capital. Capital does not come by wishing, however, and once we have it, we must be careful to maintain it.

The details of how we bring capital goods into existence can not all be presented here. In the production of such goods we make much use of financial machinery and this financial machinery is to be described in a later lesson. Certain matters can properly

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1. Is capital really productive? Does it produce anything apart from the employment of labor? Apart from the use of land? Can you name any employment in which labor produces without capital?

2. If a new machine is invented, it may possibly serve to displace laborers by performing their tasks more cheaply. Does this mean that machinery is a bad thing for the laboring class?

3. Capital increases productive power and this tends to make goods cheaper. Does this mean that capital is a good thing for the laboring class?

4. A man spent \$5,000 in providing a banquet. Would this give employment to labor? Would it have given employment to labor if the money had been expended in building a factory? From the point of view of society which is the wiser way to spend money?

5. Does the preceding question imply that spending money for amusements is unwise? What did the lesson on labor show concerning this matter?

6. Now, that we have had our discussion of capital, try to answer again whether the destruction of San Francisco increased the amount of employment for working people generally.

be taken up at this time. Capital goods, as represented by tools and machines, are brought into existence by applying to their making natural resources, labor, and physical aids already in existence. Of course, that is the only way it could be done. Now notice that productive energy applied to one purpose is not available for another purpose. Productive energy devoted to the making of capital goods is not available for making consumers' goods, such as things to eat and wear. That is what some people have in mind when they say "capital goods can be created only at the sacrifice of immediate satisfactions." It is a case of a present sacrifice for the sake of harnessing natural forces so that greater quantities of goods can be produced in the future. Of course, if the capital goods are used for destructive purposes only, like the capital now being used for military purposes, the present sacrifices are not necessarily followed by increased productivity in the future.

After capital goods have been created, they must be maintained. If we permit them to be worn out by use and do not take steps to replace them, we shall, of course, presently be without capital, and that means that we can not as readily gratify our wants.

When a business man talks of this problem, he talks about repairs, depreciation, and replacement. It is easy enough to see

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1. Try to draw up an accurate definition of a replacement fund; of a depreciation charge.
2. A sugar refiner decides to go into the silk spinning business. Can he use his old capital in his new factory? In what sense can he withdraw his capital from one industry and put it in another?
3. Put the question concerning the sugar refiner and the silk spinner in general terms. How is the amount of capital kept adjusted to the growth or decline of the various branches of industry?
4. We talk of spending money for building factories. The money does not build factories in itself. It merely gives its owner control of land, labor, capital, and organization with which to build factories. Is this a correct statement of the case?
5. In which case would society be worse off: by having five thousand gold dollars thrown into the sea or five thousand dollars' worth of useful machinery?
6. Is the miser or the spendthrift the more useful member of society?
7. A man borrows a machine which is worth \$100 and uses it for a year. When he returns it to the owner, he gives him in addition \$50, saying "Forty-five dollars is for depreciation and five dollars is for interest." Define interest.



what he means by repairs. If some part of a machine breaks, that part should be mended. Depreciation is a little harder to understand, but the point at issue is an important one. Machines frequently depreciate or deteriorate or "wear" a great deal without actually breaking down. They may finally have to be thrown away, even though no part has actually broken. The business man calls this "depreciation through wear and tear," and he usually arranges his business affairs so as to have means of replacing machines which are badly worn. If he sets aside funds from time to time for this purpose, he is likely to say he is "setting up a replacement fund."

#### DEPRECIATION DUE TO OBSOLESCENCE.

There is another kind of depreciation which is quite as important as the depreciation due to wear and tear. This is the depreciation due to the fact that machinery gets behind the times. Modern industry changes rapidly. New inventions are constantly made, and a good machine may quickly become inefficient even though it has not been used at all. The new invention may have so much greater productive power that the old machine must be sold for junk or "scrapped."

Of course, alert business men keep this possibility in mind. Many of them lay aside from time to time from the proceeds of their business funds with which to buy new machines when old ones have become obsolete.

It should be clear to us that the business man who owns capital is not the only person who is interested in providing for its proper maintenance. Ours is a cooperative society. Every one of us gains by efficient production and by proper provision for the instruments of production. It would be almost as unfortunate for those of us who are not business men as it would be for the business men themselves if through carelessness or ignorance there were a failure to conserve (which means "use wisely") capital goods.

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LESSON A-7. ORGANIZATION.<sup>1</sup>

The physical resources, human resources, and capital which a community and nation have at command must be brought into harmonious cooperation if the needs of life are to be met most economically and completely. Land, labor, and capital if separated could produce little. They must be made to cooperate. Their cooperation, furthermore, should not be in a haphazard fashion. The productivity flowing from a wise combination is many fold the productivity which results from an unwise one. So important is this matter of correct correlation of land, labor, and capital that some writers regard the task or function of organization as equal in significance to that of any one of the factors just named.

In this present lesson we shall take up a preliminary discussion of three matters connected with organization.

## ORGANIZATION THROUGH SOCIAL CONTROL.

The first of these is the part played by society itself as an organizer. Our society, as a whole, or in its various subgroups, has much to do with the correlation of the factors of production. It does a part of its organizing through social control of which we learned something in an earlier lesson. Laws very frequently play such a part. For example, people living in irrigated districts are permitted to use only so much water; under the law the State may take land from owners to build a highway, thus shifting land from one productive enterprise to another. Public opinion, customs, codes of ethics, and other forms of social control play parts similar to that played by laws.

In addition to social control, there are various institutions of modern society which affect organization. "Institutions" is a vague term. Often it is used as the name of something quite definite, visible, and tangible, such as a bank, school, or business establishment. Sometimes it is used in a more abstract way. For example, we speak of our financial system, our school system, private property, competition, or forms of business organization like a partnership or a corporation.

However the word may be used, these institutions are significant factors in the organization of business life, and for that

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<sup>1</sup> Material for this lesson was prepared by Leverett S. Lyon, instructor in the University High School and School of Commerce and Administration of the University of Chicago. The lesson is designed to show how natural resources, human resources, and capital are brought together and correlated for purposes of production.



matter in the organization of all aspects of life. Details concerning this situation will appear in later lessons. For the present, think how a bank influences the flow of capital, how the schools train us for specific pursuits and enable us to use in a general way the various opportunities about us; how competition, which is one of the abstract social institutions, forces an inefficient man out of business and turns over to a more efficient man the agencies of production.

#### ORGANIZATION THROUGH THE GAIN SPIRIT.

So much for social control and social institutions as agencies of organization. Another device which we use is the appeal to the desire for gain or profits on the part of individuals.

There is only a certain limited amount of productive land, labor, and capital in existence at a given moment of time. The portion of them which is used in making one article is not available for use in making another. If more shoes are made, less productive force is available for making other things, perhaps hats. Clearly one of the problems of modern industrial society is that of determining to what uses we shall put our existing quantities of land, labor, and capital. This is of course a problem of organization.

It is worth while to call back to our minds how this problem was met by the English priority board. In this case the organization was performed by a definite committee having definite powers of organization conferred upon them by society.

The priority board is a wartime device. Most of our apportionment of land, labor, and capital among the enterprises of the community is done not by a committee but by means of price levels and margins of profit. If more hats are desired, the price of hats

1. One of the chief problems of organization in modern industrial society is that of determining how the total amount of capital now available is to be divided among the various industries. How is this problem solved?

2. Substitute the word labor for capital in the foregoing question. How is this problem solved? Do the same with land.

3. Our business manager makes a profit if he conducts his business well. Does society gain in this case?

4. He loses in terms of dollars and cents if he does not organize and conduct his business successfully. Show precisely how society loses in such a case.

goes up and it becomes profitable for business men to devote land, labor, and capital to making them. If fewer farm implements are needed, it becomes less profitable to make them and land, labor, and capital are taken away from the making of farm machinery and turned to the making of goods which are in greater demand. This is as truly apportionment, or organization, as it would be if done by a definitely authorized committee of business men who, having command of labor and capital, placed these factors of production where they are most needed.

#### ORGANIZATION WITHIN A GIVEN BUSINESS.

The third case of organization to be discussed in this lesson is that of the proper correlation of the factors of production within a given business unit, such as a factory, a store, flour mill, or a mail-order house. In this case the organizing is planned by the responsible head of the business or by men whom he has employed for that purpose. Here also the motive force is the desire for profits. If the productive agents are well organized, the goods will be turned out at low cost and the gains of the business will be greater.

#### SCIENTIFIC MANAGEMENT IN BRICKLAYING.

Some years ago an industrial engineer had occasion to find out whether improvements could be made in the organization of bricklaying. He made a careful study of the trade in all its various applications, but for the sake of simplicity we shall discuss only that part of his study which dealt with the problem of erecting a plain brick wall for a house. Keep in mind, however, that the

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1. Does it seem to you a curious thing that the organization of production is left to private persons whom we call business men? If they are not careful and energetic are you and I worse off?

2. See if you can discover some activity in your home, in your father's place of work, or in your school where a great deal of effort is spent needlessly. Can you discover anything faulty with the arrangement of the materials with which you ordinarily work? Is your desk inconveniently high or low? Is the light poor or does it come from an inconvenient direction?

3. Can you pick out any persons in your community who appear to be better qualified for some other work than that which they are actually performing?

4. Should we include in the organization of labor for bricklaying the men who dig sand from sand pits and those who convey it to the place where it is needed?

particular organization he worked out for building a wall applied in large part to other forms of bricklaying and that the principles he followed can be used in all industry.

#### THE GAINS OF DIVISION OF LABOR.

The engineer very quickly discovered that not all men are equally good bricklayers. Some are rapid workers; some are slow workers; some build a straight wall; others a crooked one. Clearly correct organization necessitated the selection of the right man for the task.

In arranging his labor force the engineer did not stop with his selection of bricklayers. The wages of good bricklayers are high, and our engineer saw that in the usual methods of building houses these high-priced bricklayers spent a great deal of time in sorting out from a disorderly pile of bricks the ones appropriate for use in the various parts of the wall. Often, also, the bricks were delivered to the bricklayer in such a fashion that it was necessary for him to turn or "flip" many of them in his hand in order to get them in exactly the right position to apply to the wall. Neither the sorting process nor placing the brick in the right position was a task which required great skill. Either one could be performed by a low-priced laborer. Our engineer made provision that this should be done.

It thus appears that one of the tasks of organization is that of selecting the right laborer for the right task, of putting his high-priced workman on work that is of his grade.

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1. The following are some of the advantages of division of labor: (a) Adjustment of workers to tasks; (b) shortening of time involved in learning a task; (c) less waste of material in learning a task; (d) increased physical dexterity; (e) economy of tools. Show why each of these advantages is present in division of labor.

2. What disadvantages can you see in division of labor?

3. Do the advantages of specialization apply solely to the case of labor or do they apply to capital and land as well?

4. A market gardener has been cultivating a 10-acre plot with the aid of six men and an appropriate outfit of tools. Suppose that with the same land and the same tools he were to set to work 10 or 50 or 100 men. Would the crop increase in proportion to the increase in the number of laborers? Would it remain unchanged?

5. Try to work out a similar problem in connection with some phase of manufacturing industry.

## THE PROPER ADJUSTMENT OF CAPITAL AND LABOR.

Even after our engineer had secured as bricklayers the best men and had provided them with satisfactory unskilled helpers, much more remained to be done before the factors of production involved in building the wall were properly organized.

One of the tools in common use in bricklaying is the mortar board. Upon this board the mortar usually lies in such a thin heap that the worker quickly exhausts the supply nearest him and then finds it necessary to reach a long distance, and sometimes even to take a step, in order to reach the mortar on the opposite side of the board. This seemed to our engineer a poor tool, and he accordingly devised a mortar box or tub. In this the mortar was deep and when the tub was placed close to the worker long motions and steps could be avoided, for in the deep box or tub the worker could be sure to fill his trowel merely by dipping in.

This elimination of unnecessary motions was facilitated by making certain improvements in the scaffold, which we may think of as another tool. Prior to the investigation of our engineer, it was usual to have a scaffold which was not readily adjustable with respect to height. When the wall was low in relation to the floor of the scaffold, the bricklayer had to do his work in an awkward position. When the wall was high, his position was again awkward. These awkward positions seriously affected his efficiency. Then, too, on the scaffold would be a sort of table with bricks and mortar placed upon it. The height of this table was not always carefully planned. In many cases the workman had to take a step or two, stoop over to pick up a brick, straighten up, and then step back to the wall to lay it, thus using more energy in moving his body than in moving the bricks. The result was, of course, a great waste.

Our engineer made a better adjustment. He planned what he called a nonstooping scaffold which might also be called a nonstepping scaffold. The floor of the scaffold was always at the most convenient height in relation to the height of the wall, and the tables on which the bricks and mortar lay were at definite

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1. Make a visit to the kitchen of your home and study its arrangement. Can you suggest improvements in its organization?

2. Modify the question which dealt with the market gardener so as to have the number of the men constant, but to have the tools doubled or increased one hundred fold. Would the crop increase in proportion to the increase in equipment? Would it remain unchanged?

distances from the workman and from the wall, and always at definite heights. The result was a very considerable increase in the number of bricks which could be laid in a day without at all increasing the strain on the worker. Indeed, the strain was diminished.

#### THE SIGNIFICANCE OF ORGANIZATION.

This account of the organization of the factors of production engaged in the making of a brick wall tells of only a few of the improvements made by the industrial engineer. The whole story would show that he brought about almost a 200 per cent increase of productivity. We are not so much concerned in the facts as in their significance. They show clearly that an improvement in the internal organization of business units would have a profound influence upon our whole standard of living.

#### DIMINISHING RETURNS IN AGRICULTURE.

The illustration of bricklaying dealt mainly with the organization of labor and capital in a given business enterprise. Corresponding illustrations could be drawn from other industries showing the importance of a proper relation between labor, capital, and land. Another illustration can be taken from farming. A certain amount of seed, which is, of course, capital, is "right" for a given field. Too small a quantity of seed would be wasteful because it would not use the land; too large a quantity would be wasteful because there would not be sufficient nourishment for the plants.

There is in every business enterprise a certain best apportionment, or organization, of the different factors of production. When this best apportionment has been achieved, society is able to gratify wants much more readily than is the case when the apportionment is a poorer one.

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## Chapter III.

### MACHINE INDUSTRY AND COMMUNITY LIFE.

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Lesson A-8 presents the story of the transition from tool industry to machine industry and the modern factory system, showing how this change has profoundly affected the life of the people. The change began about the middle of the eighteenth century, and it amounted to an industrial revolution. England was the country in which the factory system first developed, but she no longer holds undisputed pre-eminence as a manufacturing nation.

Lesson A-9 describes some of the hardships that are associated with machine processes and shows the necessity for social control. The monotony of constantly repeating the same operation is exhausting physically and mentally; the noise and the conflicting rhythm of a machine cause strain on the nervous system; the surroundings in which some operations must be conducted are unwholesome; eagerness for gain tends to stimulate men to excessive effort. Legal regulation is necessary to minimize the dangers in these conditions.

Lesson A-10 introduces the distinction between the "indirect costs," or the constant expenses which do not vary with the changes in a business, and the "direct costs," which are variable. The extensive use of machines has naturally led, in turn, to large scale production, keen competition, and careful organization of business. There is often a very narrow line between profit and loss, and very careful calculation is necessary to determine the condition of affairs. "Cost accounting" is one of the developments of recent years in industrial establishments, designed to give the manufacturer this information.

Lesson A-11 shows the effect upon education of the demand for trained men in the industries. The need of general intelligence and of mental breadth is no less than formerly, but those qualities must be supplemented by practical knowledge of definite lines of work. Marked changes, therefore, have taken place in the subjects and methods of instruction. The number of schools has increased and the varieties of education offered have been greatly multiplied, raising the general intelligence of communities to a high level.

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#### LESSON A-8. THE RISE OF MACHINE INDUSTRY.

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Everyone is so accustomed to using factory-made articles that a handmade article is regarded as a kind of luxury. Handmade furniture or shoes or knitted garments are advertised more or less as novelties. All this is very modern. Not many generations back homespun clothes and handmade furniture were all that people knew.

The change from the simple life of hand industry and home industry to the modern way of living was very rapid, when once the success of power machinery was discovered. In less than



200 years the mode of life in the western world has been transformed.

#### THE DOMESTIC SYSTEM OF INDUSTRY.

We get our best example of the advent of the machine from the history of England, the country which led all others in the introduction of the factory system. Before the time of the industrial revolution, which for convenience may be said to have begun in 1750, the greater part of the manufacturing in England was carried on under what is known as the "domestic system." In this domestic system artisans made goods in their own houses or in sheds attached to their homes. The work was done by members of the family, assisted sometimes by one or more apprentices—boys who were learning the trade.

Many of the artisans lived and worked in little country villages. Some lived in the suburbs of large towns; others in cottages a long way from any neighbors. Whether a workman lived in a suburb, a town, or in the country, he generally had possession of some land that he could till, and he often gave as much time to farming as to manufacturing.

#### THE DOMESTIC SYSTEM MEANT TOOL INDUSTRY.

The processes and implements used by these manufacturers were very simple and inexpensive, and the implements were almost always owned by the artisan. Iron was smelted in small furnaces which were heated by burning charcoal. The draft of air for the furnaces was furnished by large handmade bellows operated by men or by oxen.

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1. If you have ever visited a factory, be prepared to report on the way in which goods were manufactured there. If you have never visited a factory, arrange for such a visit. Observe what is going on in the factory and make notes under the headings: Goods which are made; raw material which is used; amount of machinery employed; kind of power used to drive the machinery; number of different processes through which the raw material passes; number of persons employed; classes of persons—old, young, women, and children; how the goods are transferred from the factory to the places where they are sold.

2. How many of the articles in your home were made in factories? Do you know whether your clothes were made in factories? Your shoes? Any of the things you eat?

3. Make a list of the principal factories in your town. What sort of goods are made in each of them?

Nails were made from iron rods which had been forged in small blacksmith shops. They were hammered out by hand on anvils and cut to proper length with chisels. Soap was produced by boiling together in a small kettle wood ash and sheep's tallow or other fat. Wood was used as a fuel, and the materials used were stirred and mixed with a hand ladle.

#### THE CLOTHIER.

Under this domestic system there was of course organization of the various steps in getting goods into the possession of consumers. At times it was a very simple plan by which the tradesman personally owned the raw material and tools and product and sold the product to customers who came to his shop, or sold it at the town market. The more typical arrangement, however, was that which is exhibited by the case of the so-called clothier. He bought wool from the woolgrower, or from wool merchants, and delivered it at short intervals to the scattered spinners whom he paid for working it into yarn. The yarn made by the spinner belonged to the clothier. After getting it from the spinner he carried it to the weaver, whom he paid for making it into cloth. In a similar way this cloth was then carried through the remaining steps, such as milling, dyeing, shearing, and dressing. Under this arrangement the clothier owned the raw material used in every step of manufacture. He hired the services of the various artisans, who owned their tools and workshops. These artisans thus fixed for themselves the number of hours they worked, the intensity with which they toiled and the methods they used in production. In other words, they made most of their "conditions of work" for themselves.

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1. The domestic system of industry was preceded by what was called the "guild system." Find out about the guilds in an encyclopedia or an industrial history of England. Show wherein the domestic system was different from the guild system.

2. Look up the words "apprentice" and "journeyman" in a good dictionary and see how these persons fitted into the guild system.

3. Where does the raw material come from that is used in any of the factories in your community?

4. Make a list of the agencies which are used in bringing raw material to the factories of your community. Who is the middleman?

5. Find out what methods or agencies are used by some factory in your community in getting its goods into the hands of sellers. Was the clothier able to use these agencies?



The cloth which was made in this way was the property of the clothier. He sold it either to cloth merchants or to customers at markets or fairs. These clothiers were very useful members of the industrial society in which they lived. One writer has said of the clothier that he "occupied a very responsible and prominent place in the local community. He was the moneyed man, the paymaster, and the employer of the whole vicinity. The neighborhood's activity and prosperity rested in his hands."

#### LARGE MARKETS DEMAND MORE EFFICIENT PRODUCTION.

Under the most favorable conditions the production of cloth by such a method was slow. In the England of 1750 the market had grown very large and the scattered small shops could not produce goods fast enough to meet the demand. For 250 years forces had been at work making England's markets larger and larger. Some of these forces worked within England itself and caused the English people to know more about one another and to be more willing and able to trade with one another. Other forces operated to extend England's trade relations with the outside world. The great geographical explorations and discoveries of the late fifteenth and early sixteenth centuries had been followed by a period of formation of colonies by the leading European countries and by the organization of great trading companies. England's share in all these operations was a large one, and English goods were in wide demand. Under such circumstances it is not surprising that men began to cast about to find more efficient methods of manufacture than the methods which existed under the domestic system.

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1. Someone has said that the history of industry may be summed up as a story of the taking of everything from the control of the worker. What did the clothier take from the control of the worker? What was taken from the worker by the factory system?

2. Was it possible to secure the advantages of specialization under the domestic system? The advantages of careful supervision of methods of production? The advantages of definite control of the hours of labor?

3. Do you know of any cases where the apprenticeship system is used to-day.

4. The following are some of the reasons why the market for English goods was so large in the eighteenth century: (a) The geographical discoveries and explorations which occurred at the opening of the modern era; (b) the invention of the printing press; (c) the development of the English colonies. See if you can explain why each of these would widen the market.

## THE INDUSTRIAL REVOLUTION.

The way out of the difficulty was not found by any slight modification of existing methods. Beginning about 1750 there came great changes in the industries of England. These changes were so marked, occurred in so many industries, and took place so rapidly that together they are often spoken of as the industrial revolution. It would be impossible for us to follow the changes in every industry, nor is it necessary that we should. By taking note of the changes in the manufacture of cotton cloth, we can get an understanding of what was occurring throughout all industry.

## HOW COTTON CLOTH WAS MADE BEFORE THE INDUSTRIAL REVOLUTION.

The process followed before the industrial revolution may be described as follows: The raw material for making cotton cloth was the tangled mass of cotton fibers which came directly from the fields. The only work which had been done on it was the laborious work of picking out the seeds by hand. The first step taken toward making cloth was to straighten out the fibers so that they lay parallel. This was accomplished by "carding" or brushing and combing the fibers by hand with stiff brushes called "cards." The next step was "spinning," the process of drawing out the parallel fibers into a loose slender string and twisting them at the same time so that the fibers adhered to one another and formed a cord or thread. The spinning was done with simple hand or foot-power spinning wheels, in the operation of which the fibers were

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1. Why is tool industry not as productive as machine industry?
  2. Find out at what times the canal and the railroad helped to widen the market. How could they help to do this?
  3. Answer the same questions for the telegraph and the telephone.
  4. One writer has said that the industrial revolution is the result of an increased demand for products. Another writer says it is the result of centuries of development in science which made possible the making of machines. What do you think is the truth of the matter?
  5. Find out in what period the great central region of the United States was settled. Would the settlement of this region have any effect upon the development of machine industry?
  6. Did any part of the cotton that was used in cloth-making come from the United States? What proportion of the world's raw cotton does the United States produce today?

drawn out by hand and twisted by a whirling device called a "flyer." When the fibers had been thus spun into thread, the process of weaving remained to be done. This work was performed on hand looms. The "warp" threads were first stretched across a wooden frame and by means of a large wooden needle which was called a "shuttle," the "woof" threads were woven horizontally across them. After the cloth was woven it was often bleached by a slow process, and if a figured cloth like calico was desired, the color was stamped on with hand dies.

#### SPINNING INVENTIONS.

All of this work was slow and tedious, but it was spinning that required most time. One rapid weaver could use the yarn or thread supplied by six spinners. In 1738 an invention called the "flying shuttle" increased the speed with which weavers could work and made men who were interested in cloth manufacturing still more anxious to improve the methods of spinning.

In 1764 one of the small manufacturers of England, James Hargreaves, a master weaver, invented a machine with which one man could spin 8 threads at the same time. In honor of his wife, Hargreaves called this machine the "spinning jenny." Other workmen soon made such improvements that jennies spinning 30 threads at a time came into use. Finally, Samuel Crompton, another weaver, combined the good qualities of all the earlier machines and made a machine called the "spinning mule." It spun a finer cotton thread than could be spun by the old spinning wheel and made possible the manufacture of muslin cloth.

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1. "The inventions connected with the cloth-making industry furnish a good example of an improvement in one process making it very important to have corresponding improvement in another process." Assemble the facts connected with the cloth-making inventions and find out whether this statement is true.

2. It is sometimes said that the industrial revolution lasted from 1750 to 1830. Prove that factors contributing to the revolution began much earlier than 1750 and that the revolution was not over by 1830.

3. Many people assert that the new machinery which came in at the time of the industrial revolution would have been of little use if means of transportation had not greatly improved at that time and later. Do you think such a statement is justified?

4. "Machine industry did not come into its own until machines were used to make machines." Why is this so important? Why did they not use machines to make machines at the very outset?

## OTHER CLOTH-MAKING INVENTIONS.

These great advances in spinning methods stimulated invention in other processes of cloth manufacturing. A machine for carding came into use; a "printing cylinder" was invented with which calico could be stamped a hundred times faster than before; the use of chemicals replaced the old methods of dyeing cloth; weaving was greatly facilitated by the invention in 1785 of a loom operated by water power or steam which could weave cloth at a speed unthought of before. Finally, in 1792, Eli Whitney, an American, invented the cotton gin. Before the invention of the gin one man working with hand tools could remove the seeds from 4 or 5 pounds of cotton in a day. With the new machine one man could clean 1,000 pounds of cotton in a day. This invention made it certain that the new machinery of the cloth manufacturers would be supplied with raw material.

## CORRESPONDING CHANGES OCCURRED IN OTHER INDUSTRIES.

The new machines appeared in rapid succession and changed the whole industry and also the mode of life of the people. What happened in the cotton industry happened also in the other textile industries. Corresponding changes were occurring at about the same time in other branches of industry. The most striking and important of these occurred in the iron trade. Some of the important discoveries were how to use coke instead of charcoal; Cort's invention for puddling and rolling; how to use a hot

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1. Find out what each of the processes mentioned in the iron industry is, and how it contributed to the cheapened production of iron.
  2. The lesson points out some illustrations of how simple processes have been supplanted by complex industrial processes. Find other illustrations.
  3. The list of inventions connected with cotton-cloth making seems to cover the stages after the harvesting of cotton. Have machine methods become available for cultivating and picking cotton?
  4. Which seems to you the more important, the presence of machines or the application of power to machinery?
  5. Was the industrial revolution purely industrial in character? Are you justified in calling it a "revolution," or would "evolution" be a better term?
  6. Think back over the work of the clothier in the woolen industry and make a list of the equipment he would need in his business. Do you think that a person corresponding to the clothier might have existed in the cotton-cloth business?

blast in smelting; and how to use raw coal instead of coke. Such discoveries revolutionized and greatly cheapened the production of bar iron. Since iron is really the foundation of all machine industry, the significance of these facts can hardly be overestimated. They meant a plentiful and cheap supply of the material which was essential to any considerable supply of steam engines, railroads, and the giant machines which make other machines.

#### SIMPLE PROCESSES YIELD TO COMPLEX PROCESSES.

The simple processes of the period of domestic industry have yielded to machine processes. Only here and there and on a very small scale do the earlier methods survive. The kettle of the soap boiler has given way to a long chemical process. The anvil and chisel of the nail maker have been replaced by steel mills. The village potter has found that the pottery factories have made work with hand tools unprofitable. So thoroughly have machine industry and machine methods come into our whole life—into its manufacture, its marketing, its methods of communication, and even its amusements—that we sometimes call this “the machine age.”

We shall be greatly in error if we think that the industrial revolution is a thing of the past. It is still going on. Its first phase lasted until about 1830, and may be characterized as the period of the coming in of machinery. From 1850 to 1880 was a period of building great machine shops to build machinery. Since 1880 the

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1. One reason for such large industrial plants as we have to-day is that power can be made cheaply in large quantities. Suppose some one should invent a process by which power could be made as cheaply in small quantities as in large. List the effects you think this would have upon industry. Would it be likely to cause industry to move back into the homes and small workshops?

2. It is said that the advent of machine industry has done a great deal to bring about the existence of a definite labor class. How?

3. “The machine has caused the trade-union.” Is there any truth in this statement?

4. “The machine has caused modern large-scale production.” What does “large-scale production” mean? Do you agree with the quotation?

5. “The machine has caused industry to become impersonal.” What does this mean? Is it true?

6. “Machine industry has caused the present great war.” How far does this seem true? Is machine industry used much in the war?

applications of science to industry and the search for markets have led writers to speak of our period as the third period of the industrial revolution—the period of scientific management and of revolution in buying and selling methods.

#### SOME CHANGES WROUGHT BY MACHINE INDUSTRY.

It is easy for us to see that the introduction of machinery would very greatly increase the quantity of useful goods and would greatly change the ways in which they are made and marketed. Let us notice the great differences in the management of industry brought about by machine industry. Machinery was too expensive for the artisan to buy and too large and too dependent upon nonhuman power for the artisan to be able to operate it in his home or little workshop. It had to be located where water power or steam power developed by coal was available. Since power could be produced more cheaply in large quantities than in small quantities, the development of machinery meant housing industry in the large buildings which we call factories. There, under one roof, with regular hours of work determined by their employers, with the machinery owned by the employers, with the conditions of work largely determined by the employers, most of the former artisans, and often their wives and children, were collected to become factory hands or mill workers. This resulted in modes of life wholly different from those which existed when the clothier carried on the textile industry.

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1. The industrial revolution led to large-scale industries and to increasing difficulties in the management of industry. Show that accounting is a device which the modern business manager uses to help him control his business.

2. "The industrial revolution has greatly changed the incentives felt by labor. To-day wages form the main incentive. There were many other incentives before 1750." Can you name any of them? .

3. What is meant by saying that machine industry is largely responsible for the development of modern cities? Can you name any problems which have resulted from this growth of cities?

4. "Railroads haul food and thus make it possible for people to live in cities." "Railroads carry people and thus make it possible for city workers to live in the suburbs and in the country." Does the railroad cause concentration or diffusion of population?

5. Draw up in parallel columns a statement of the conditions under which artisans worked prior to the industrial revolution and the conditions under which factory hands work to-day.



## THE SPREAD OF MACHINE INDUSTRY.

From England the new machine industry spread to other countries. In America, Belgium, Holland, Germany, France, Italy, Spain, Austria, and Japan, goods of all sorts are now made chiefly in factories and by machine methods. These nations are now what England alone was at one time—"workshop of the world." It is clear enough that this has meant a very great change in the way in which all the civilized peoples of the world live.

## THE HUNGER FOR MARKETS.

The factory system manufactures goods so rapidly that of late years the countries which have been most successful in large-scale manufacturing, such as England, Germany, and the United States, have found it difficult to sell all the goods that they make. This difficulty has led to many interesting developments. For one thing, it is in the past generation that advertising has come to play such a prominent part in our industrial life. Advertising was known hundreds of years ago. It has been only under the modern pressure for markets that it has become more or less of an institution. So, also, great emphasis is now placed on other matters connected with salesmanship. Business houses conduct schools of salesmanship for their employees. Colleges of commerce are established in the universities the country over. Still another consequence is seen in the giant combinations of business, called "trusts," which have been formed largely to reduce competition for markets. Finally, merchants of the various countries have sought outlets for their goods in less developed regions. They have pushed into foreign lands, have tried to build up colonies, and have built up trade connections. One of the potent causes of the present great war in which we are engaged was the rivalry of nations to find markets for their goods.

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LESSON A-9. SOCIAL CONTROL.<sup>1</sup>

The wide use of machinery has created conditions for the worker, for the employer, and for society at large very different from those which existed before its introduction. Some of these new conditions are distinct improvements. Others are of doubtful merit, and still others have within them such clear possibilities of harm that the whole community feels called upon more and more to cope with the situation. When the community takes up such problems through the proper agencies we speak of the exercise of social control.

## THE MONOTONY OF MACHINE OPERATIONS.

One of the first matters we notice with respect to machine operations or processes is that these operations are what is called "standardized." The same operation is repeated over and over again, and is exceedingly monotonous. In the use of the very earliest machines monotony was not so extreme, because the machine operative oiled the machine and looked after its repairs and its raw material. As time went on, however, machinery became more and more automatic; that is, it regulated itself more and more, and it left to its tender only routine and monotonous duties. With many machines to-day the machine tender spends hour after hour, day after day, and possibly year after year going through the same limited set of motions over and over again. The constant use of the same muscles and the same nerve centers fatigues and exhausts the worker much more quickly because there is no chance to obtain the relief which comes from variation in the work done. At the same time the monotony is deadening mentally. The worker knows only one process, and in this process there is little room for individual initiative, little opportunity for broadening his mental horizon.

## NOISE AND RHYTHM OF MACHINES.

Comparable to the results of monotonous toil are those flowing from the fact that certain machines run at what is called a "rhythm" which differs from the rhythm of the worker. We do not yet know a great deal of this matter of rhythm, but we do

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<sup>1</sup> This lesson was prepared by Chester W. Wright, associate professor of political economy, the University of Chicago. It shows that some of the machine processes are in themselves a hardship for workers and that the difficulties may be accentuated by the presence of the desire to make great gain. Under such circumstances social control becomes a necessity.



know that operations at a rhythm conflicting with one's natural rhythm cause strain on the nervous centers, and if unduly continued may result in complete breakdown.

Then, too, the noises attendant upon machine operations have a wearing effect upon the nervous system.

#### UNHEALTHFUL SURROUNDINGS.

From the very nature of the case some operations connected with machinery must be performed under conditions trying to the health. A list of such matters would include, among other things, processes that require artificial humidity, such as the weaving industries; processes that require a sudden change from great heat to cold and vice versa, such as galvanizing iron; processes in which danger arises from injurious particles in the air or from dust, such as trades which use emory wheels; processes which involve the use of chemical poisons, such as the preparation of lead and the manufacture of matches.

#### THE GAIN SPIRIT INCREASES THE DIFFICULTIES.

Monotony, noise, conflicting rhythms, and unhealthful surroundings are difficulties connected with modern technological processes, merely as processes. The situation is made more difficult by the fact that industry is organized on a gain basis. Business managers seek profits. This is by no means altogether an unfortunate situation. The desire for gain stimulates man to great activity. It does, however, have some features which require regulation and control. We shall see that this is particularly true of machine industry.

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1. Can you think of any standardized processes which are not machine processes? As for example, social manners? Would the evils connected with monotony apply to such cases?

2. Can you give reasons other than those stated in the lesson why monotony is deadening mentally?

3. Name some advantages which a boy living on the farm has over a boy working in a city factory.

4. Trying to see how heavy a weight you can lift is said to test your muscular strength; trying to see how many times you can raise and lower your arms is said to test your endurance. Can you think of some form of work which illustrates this difference?

5. Why does a person working in a noisy room become tired sooner than one in a quiet room?

6. Do you think there is any connection between overwork and drunkenness?

## LONG HOURS AND HIGH SPEED.

It is easy to see that after a factory is set up there will be a great temptation to keep it going all the time. Every hour that a machine stands idle or the building is empty there is waste from lack of use. The machine might produce something all the time if there were men to run it. The machine is not sensitive and capable of fatigue like the laborer.

This leads directly to a tendency to run the factory many hours a day. This tendency showed itself in the very earliest years of the factory system. The early mill hands of England frequently had to work for 14 or even 16 hours a day, with only short stops to enable them to eat their meals. Later, when inventions had made it possible to supply better light, many mills were run all night as well, with two shifts of workers, each working for 12 hours. If the work was very difficult, they often had three shifts working eight hours each. In some industries, too, the work was of such a character that it was difficult to shut down even on Sundays, so the laborers toiled seven days a week.

The desire for increased output which leads to long hours also causes the machinery to be run at high speed. When one adds high speed to monotonous work, noisy work, work under bad health conditions, long hours, and conflicting rhythms, the result is intense strain and this means great fatigue.

Nor does one need to attribute all these evils to a vicious greed. There was general ignorance and a kind of universal rush into the dangers without any clear thought of consequences. It is only gradually that men have come to be intelligent about the relations of factory life to human needs and human possibilities.

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1. Make as long a list as you can of industries where there are processes which require artificial humidity; which require sudden change from heat to cold; which are dangerous because of injurious particles in the air; which are dangerous because of the use of poisonous chemicals.

2. Explain why it is often cheaper to run a factory day and night, instead of by day alone.

3. Do you know of any factories that run seven days a week? Do you know whether there is any special reason for doing so?

4. In what ways might it affect a family if the mother worked in a factory during the night?

5. Name some kinds of factory work carried on chiefly by men; some carried on chiefly by women.

6. Do you think the introduction of machinery which can be run by women has been of advantage to women?

## FATIGUE CAUSES ACCIDENTS.

Experience and a growing intelligence on industrial matters have convinced the community of certain evils of fatigue. Thus it is to-day a well-known fact that a very considerable portion of all industrial accidents are due to overstrain and fatigue. Each movement of the muscles wears out a portion of the tissues and creates waste matter which must be carried away, while the fresh blood rebuilds the tissues. But if such rapid muscular action is required that this waste matter can not be carried off, it acts as a kind of poison, and what we call "fatigue" sets in. Then the muscles will not contract and relax so readily as before; work becomes hard; motions become inaccurate, and accidents result.

A proof of the close connection between fatigue and accidents is afforded by an investigation made in Germany. A table giving the hours of the day during which accidents to workers occurred shows that the number of accidents steadily increased from 6 o'clock in the morning until noon, there being two or three times as many in the last hours as during the first. The same was true of the late hours of the afternoon as compared with the earlier ones.

## OVERSTRAIN NOT REALLY PROFITABLE.

We have said that some of the evils we have enumerated are due in part to the gain spirit. It is now beginning to be clear that it is not always profitable to conduct factory operations in such a way. Men have misunderstood the situation; they have not known all the facts. A striking illustration of how mistaken a policy it is to overfatigue the worker was found by a manufacturer who tested the output of the workers under long hours and also under short hours.

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1. Do the statements concerning fatigue poison made in the lesson apply only to physical labor, or are they equally applicable to mental labor? Do people ever break down because of mental overstrain? How can such a disaster be guarded against?

2. Draw up a list of reasons why greater output can be secured in some industries by working shorter hours.

3. Take an industry where a greater output results from reducing the hours of labor from 12 to 10. Would the output increase still further if the hours were reduced to 8? If they were reduced to 6, to 4, to 2? At what point should hours be fixed?

4. Why will a man enter an occupation where there is danger of accidents? What special inducements are made in such cases?

In one case where he decided to run longer hours he soon found that as a result of the overstrain the amount of spoiled work doubled and the total output was actually less than for the shorter hours. When the length of the workday was reduced, the output increased and the amount of spoiled work fell off.

What the hours should be and how frequently the rest periods should come, vary with different kinds of work. It is in part through a very careful study of this problem that those who have been using "scientific management" have been able to increase the output of many workers.

#### THE MUNITION WORKERS OF ENGLAND.

The importance of this problem was clearly shown in England when the present war broke out. It was necessary to increase greatly the output of munition factories as soon as possible. So they ran the factories at top speed day and night, Sundays as well as week days. At first there was an increase in output, but soon the long hours of work and the resulting overstrain began to be felt. There were more accidents; the work was more often defective and the workers were more frequently sick and could not come to work. Some factories tried working the hands shorter hours and learned that they could secure as large, if not a larger output. It was found, for example, in a group of boys between 14 and 17 years of age that when the number of hours of work per week was reduced from 70.3 to 57, the total weekly output was increased 38 per cent. This is but one illustration of what many manufacturers discovered.

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1. It is becoming clear that we shall have difficulty in getting enough labor to build our ships, mine our coal, and make our munitions in this present war. What does the experience of England indicate with reference to the wise method of meeting this situation?

2. The English "diluted" labor in the skilled trades by introducing women workers and apprentices. Show from the character of machine industry how this could be done. Indicate some of the safeguards which should be thrown around such a procedure.

3. If all children over 10 years of age were put to work at once, would the labor power of the country be greater? Do you think it would be greater 15 years from now than it otherwise would have been? Fifty years from now?

4. It has sometimes been said that efficiency experts who install scientific management increase output by overspeeding the worker. The efficiency experts deny this. Show that such a procedure would be unscientific.

A commission which investigated the situation reported that there were many cases where the output would be increased if hours were reduced. They said that it was a mistake to keep women and children and even men at work on Sundays as well as week days.

#### DETERIORATION\_DUE TO FACTORY WORK.

In England, after the factories had driven out the household industries, it was a common observation that there was a marked decrease in the stature and strength as well as in the morals of the workers in the manufacturing cities. In France, when young men reported for compulsory military service, it was found that the number rejected because of physical unfitness in the great manufacturing districts was nearly twice as many as in the country districts. The chief cause for this was said to be the overstrain and injury of factory work.

#### THE NECESSITY OF SOCIAL CONTROL.

It is clear that if a nation wants to have strong men to defend it, if it wants to have its working people as efficient and capable as possible, if it wants to have intelligent and useful citizens fit to meet the responsibilities of a democratic form of government, and if it wants its inhabitants to be healthy, happy, and contented, it must take measures to lessen and abolish these evils so far as possible. In other words, there must be an intelligent social control which will bring about that type of industrial organization which in the long run will be the best for all the members of the community.

Fortunately, very much is being done to offset the unfortunate results of machine industry. The campaign for improvement began in England very early after the introduction of machinery. Factories had hardly ceased to be novelties before an agitation was started to procure laws which would prevent the employment

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1. The lesson speaks of individuals and associations having worked to improve conditions. Can you name any such individuals and associations?

2. Name some physical defects that might be caused by overwork which would make a man physically unfit for the army.

3. If a man is willing to work over eight hours a day in a coal mine, do you think the State has a right to interfere with his liberty and prevent him from doing so?

of young children and the long hours of work for women, these being the worst evils at that time. From that early period to the present time individuals, associations, and legislatures have done much to make matters better.

#### THE NEED OF GENERAL CONTROL.

An element of delay comes from the fact that a single manager hesitates to make the improvements needed lest his costs go up, and some competitor who has remained on the old basis is able to undersell him. The only fair way is to have a general law which everyone must obey. In the United States this is a particularly serious matter because of the competition between the manufacturers of different States and the fact that most labor laws are enacted by the States. This has led to efforts to have the Federal Government pass laws regulating labor conditions where it has the constitutional power to do so.

#### WHAT ONE STATE HAS DONE.

The Russell Sage Foundation has published a list of what one State has done in these matters. It is not an unusually good showing, but it indicates the drift of legislation.

1893. State department of factories and workshops created and laws enacted prohibiting employment of children under 14 years of age, or of women, in the manufacture of wearing apparel, for more than 8 hours a day and 48 hours a week. Previously in 1877 and again in 1891 there had been efforts at child-labor legislation, but failure to provide State inspectors to enforce the laws rendered the acts ineffective.

1897. Child-labor law enacted covering not only factories but offices, laundries, mercantile establishments, and stores, and fixing maximum hours of labor of children under 16 years of age at 10 per day and 60 per week.

1897. Act passed requiring the installation of blowers to remove dust from metal polishing, buffing, and grinding wheels.

1. It is said that the person who buys the products of an industry where accidents occur ought to bear the cost of the workman's compensation. Do you think this is fair?

2. Can you cite cases where public opinion or codes of ethics have served to limit the evil effects of machine industry?

3. Explain how it can be said that insurance distributed the economic loss resulting from accidents.

4. Is insurance against accidents likely to lessen the number of accidents?

5. Are labor laws likely to increase the cost of goods which you buy?



1901. Child-labor law strengthened, and all establishments required to provide suitable seats for women and girls.

1903. Present child-labor law enacted.

1907. Factory inspection department established as separate department of the State government, and its powers extended.

1907. Present law enacted providing for health, safety, and comfort of workers in factories, mercantile establishments, mills, and workshops.

1907. Act passed to provide for the safety of persons engaged in construction, alteration, or repair of buildings, bridges, viaducts, and other structures.

1908. Act passed preventing employment in coal mines of persons who have not been passed by a State miners' examining board.

1909. Law enacted limiting to 10 per day the hours of work of women in factories and laundries.

1910. Act passed provided for fire-fighting equipment in coal mines. Later amended and strengthened.

1911. Women's 10-hour law extended to cover mercantile establishments, hotels, restaurants, offices, and other enumerated places.

1911. Law enacted to protect workers from occupational diseases.

1913. Act passed consolidating and strengthening laws to provide for safety and welfare of workers in coal mines.

1913. Present workingmen's compensation law enacted.

Other States have legislated in other fields, as, for example, the establishment of minimum wage boards, the prohibition of night work by women, the limitation of the workday to 8 hours for women, the guaranty of one day of rest in seven to all workers, the enactment of compulsory compensation laws, and other measures. That the public will exercise increasing influence through legislation for improved industrial conditions appears certain, and should be encouraged, particularly with reference to the strengthening of the child labor laws, the reduction of the hours of working women, the protection of workers from physical hazards, and the establishment of minimum wage boards.

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LESSON A—10. INDIRECT COSTS.<sup>1</sup>

Machines are far more expensive than simple tools. They can be wisely used only when there is a large demand for their product. It is no accident, then, that machine industry and large-scale production, go hand in hand. The cost of the machines and of some other elements in these plants is very great, and the presence of this cost has had very striking consequences.

An analysis of costs in a modern factory would lead us into such a complex situation that it is best to consider first a simple case. Let us take as an example the hotel manager who made an investigation to find out what effect a change in the number of his guests had upon his costs.

## INDIRECT COSTS.

He had not gone far in his investigation before he found that certain elements of his costs did not change with a change in the number of his guests. For example, he paid an annual rental for the hotel which he operated. This cost remained constant no matter how many guests he entertained. The same was true of the taxes he paid. As he read books which discussed accounting matters, he found that costs which remained constant notwithstanding changes in the volume of the business were called "constant" or "overhead" or "indirect" or, sometimes, "supplementary" costs. The writers applied these terms to the costs that did not vary with variations in the business; they could not be attributed to the presence of any given item or unit of the business, but were incurred for the sake of the business as a whole.

The hotel manager found that there were other items of cost which were not absolutely constant, but did not change as greatly as the volume of the business. For example, the amount of gas used in heating his ovens and in other cooking showed some falling off when he did not have many guests, but it was a relatively small falling off, for the ovens had to be maintained at a certain heat no matter whether much or little food was prepared in them; and much the same considerations applied to other kinds of cooking.

Somewhat the same situation existed with respect to his laundry costs, since the hotel maintained its own laundry and did not have the work done at piece rates. Then, too, the number and

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<sup>1</sup> This lesson was prepared by Leon C. Marshall. It shows something of the changes in our industrial relationship which have been brought about by the presence of overhead costs. These overhead costs are more the result of machine industry than of any other single factor.

total wages of porters, bell boys, maids, door men, waiters, and other employees remained somewhat constant, although, of course, he brought in some additional help in rush seasons. In general terms, he came to the conclusion that most of these costs would also have to be regarded, for purposes of a general inquiry, as supplementary or indirect or overhead or constant costs.

#### DIRECT COSTS.

There were some costs, however, that varied very closely with the volume of the business. His butcher's bill was one of these. In general, it was ten times as large when his guests increased tenfold. What was true of the meat bill was true of most other items of food. As he read on the subject he found that accountants called such costs as these "prime" or "direct" or "variable" costs, meaning of course that they are costs which can be specifically assigned to a given unit of the business. If that unit of business is not present, the costs are not present. As the number of units increases, the costs increase at about the same rate.

#### THE ELEMENTS OF COSTS IN A FACTORY.

From this story of costs in the hotel business it is apparent that total costs in any business are made up of two items, the prime or direct or variable costs, and the supplementary or indirect or overhead or constant costs.

One writer on cost-accounting classifies costs as follows:

There is first the production cost which is made up of direct costs plus the indirect costs. In addition to this production cost there is expense connected with selling and general administration which is, of course, one kind of overhead costs. The production cost plus the selling and general administrative cost gives the total cost of making the goods. The difference between this total cost and the selling price is the profit.

The same writer gives a list of the items which occur most frequently in indirect costs connected with production. The items, of

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1. Draw up a definition of direct cost and give 6 illustrations of it.
  2. Draw up a definition of indirect cost and give 6 illustrations of it.
  3. Which kind of cost, direct or indirect, forms the larger part of total costs in the following businesses: Making sun-dried bricks by hand; cobbling shoes; making shoes in a factory; unloading coal by a steam shovel?
  4. Would it be good business policy for the manager of the hotel to offer secretly lower rates to some possible guests if otherwise they would not stop with him?

course, vary from factory to factory, but the following list is a helpful one:

Indirect material.	Inspection.	Repairs.
Oil.	Experimental work.	Power or power plant.
Supplies.	Rent.	Light.
Freight and express in-	Taxes.	Heat.
ward, when not charged	Insurance.	Small tools.
to direct material cost.	Interest.	Wastes of materials,
Indirect labor.	Depreciation.	shrinkage of weight,
Supervision.	Maintenance.	defective work.

#### INDIRECT COSTS STIMULATE OUTPUT.

The consequences of indirect costs in industry are very numerous and very important. Some persons say it is the most significant single fact in modern industry. This is claiming a great deal, but such a statement, made as it is by thoughtful students, justifies study of the situation.

In industries where indirect costs are a large part of the total costs (and a list of such industries includes railroads, machine shops, factories, and, in brief, practically all business plants of large size), there is a very strong incentive to increase the volume of the business. The experience of a certain manufacturer of straw hats shows why this is true. This man found that the total of his indirect costs for a year amounted to \$10,000. He found, further, that the direct costs entering into each hat, including both direct labor and direct material, were 50 cents. If he should manufacture and sell only 1,000 hats in the course of a year, his direct costs on the 1,000 would be \$500; his indirect costs \$10,000—a total of \$10,500. Clearly enough, a price of \$10.50 for each hat would just enable him to get back his costs. If, however, he could make and market in a year's time 10,000 hats, his total costs would be \$15,000, and a price of only \$1.50 a hat would enable him to meet his costs. He concluded that he ought to produce many hats and offer them for sale at a fairly low figure.

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1. If a railroad between New York and Chicago is already in existence and trains containing some empty cars are running, what added cost would the railroad incur if it hauled a 5-pound box from Chicago to New York?

2. Would it be good business policy for the road to haul such a box at a rate only a little in excess of this added cost if it could get no more for the service? Would it be good policy to haul all traffic at such rates?

**THE PROPER PRICE IS DIFFICULT TO DETERMINE.**

At what figure? The exact answer to this question would involve many business considerations which can not be taken up in this lesson. The lower the price the more hats people would buy; but it should be clear that he could not afford to put the price below 50 cents, for the straw cost and the labor cost specifically incurred for each hat were 50 cents, and such a price would leave him nothing which he could apply toward meeting his overhead costs. The price should be something above 50 cents, and it should be a figure that would bring into existence a large volume of business, so that the constant costs could be spread over many units.

The existence of indirect costs is clearly one of the reasons why many businesses have a tendency to grow larger and larger. This is such a general tendency that we have come to say that we live in a period of large-scale production. The discussion of the advantages and disadvantages of large-scale production is taken up in a later lesson, but we see one of the causes of the situation now.

• **INDIRECT COSTS STIMULATE ADVERTISING.**

The incentive to increase the volume of business because of indirect costs also helps to explain why advertising has within the past generation become such an important part of our economic life. We have had advertising, even in newspapers, for several centuries. In the days of simple industry, however, when direct costs were the major part of total costs, there was not the same incentive for business men to extend their business that there has been in the past 50 years. Accordingly, only in this recent period have we had national advertising, direct selling, and advertising agencies.

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1. What is the relation of machinery to large-scale production?
  2. "In the days when direct costs were the major part of total costs the incentive to extend a given business was not great." Explain why.
  3. Show why the hat manufacturer's profit would be \$3,500 on a sale of 3,000 hats.
  4. Can you name other matters aside from indirect costs which make industry speculative to-day? Do the wider markets of to-day make it speculative?
  5. Find out more details concerning the nature of cost accounting and the uses which can be made of it.
  6. Draw up a list of the consequences (a) to society, (b) to the business manager, of the rise of indirect costs.

## BUSINESS BECOMES MORE SPECULATIVE.

Even the very simple illustrations of the hotel and the straw hats serve to show another consequence of indirect costs—the difficulty involved in obtaining accurate knowledge of when a business is profitable and when it is unprofitable, or of what part of a business is profitable and what part unprofitable.

Let us take up the hat case again. Suppose that in a given year the hat manufacturer was making and selling at \$11 each 1,000 hats. This would give him a profit of \$500 for the year. Suppose that the manufacturer told his foremen that he intended to cut the price of hats to \$5. His foremen might well be pardoned for believing that this would lead to bankruptcy. Yet if the lower price should result in a sale of 3,000 hats, his profit for the year's work would be \$3,500. Of course it could not be known in advance what result in sales would be brought about by the reduced price.

## THE USE OF COST ACCOUNTING.

People have in mind this difficulty of ascertaining the facts when they say that our industry to-day is speculative. It is not easy to know what facts will develop. Chances must be taken. Such a situation is, of course, not pleasing to business managers, and they try in many ways to obtain knowledge as definite as possible. The way most closely connected with indirect costs is by the interesting device known as "cost accounting." This is a recent device. Its essential feature is that by careful analysis one assigns to each unit of the product the direct costs involved, and on some appropriate basis apportions or allocates the indirect costs. The business man finds that he can use information of this sort not merely to tell him what his costs have been but also to point out how he can operate his business more economically.

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1. Prove that the hat manufacturer's total costs would be \$15,000 when he made 10,000 hats.

2. What would his total costs be if he made 7,000 hats? If he made 25,000 hats? Find out at what price he would have to sell his hats in each case to get back his total costs.

3. Explain why it is that it is desirable to have "a large volume of business so that the constant costs can be spread over many units."

4. "In industries where the indirect cost is a large proportion of the total cost, it pays to take business at a price which is below total cost provided that price is above prime cost." Explain why.

5. The Federal Government passed a law some years ago which forced all railroads to use the same system of accounts. What reasons can you assign for such a law?

He can learn fairly definitely what parts of his business are run at a loss, what parts are profitable but cost too much, and what parts would be more profitable if they could be expanded.

#### CUTTHROAT COMPETITION.

Indirect costs also give us a partial explanation of that curious phenomenon called "cutthroat competition." Cutthroat competition means simply that business managers in their struggle for added business or to retain their existing volume of business, cut prices lower and lower until they are perhaps selling their goods even below prime cost. Such a policy must, of course, result in business failure and would probably not be followed if business managers could know all the facts in the case. Unless, however, the managers concerned have remarkably good cost systems, they do not know what their prime cost is. They might go lower and lower in the hope that the increased volume of business at the lower price may prove profitable.

#### PROBLEMS OF SOCIAL CONTROL.

Cutthroat competition is at its worst when the business is one which uses highly specialized capital which can not be transferred to some other occupation. The railroad industry is a good illustration. In the 1870's and 80's the railroads of the country competed so strenuously for traffic that many evils emerged. They offered discriminating rates and discriminating services. They even paid back money to certain shippers if they could not induce them to send freight over their lines in any other way. This was called "rebating."

The railroad is one of the basic industries. It is used by almost everyone. Unfair, secret practices in such an industry were a great hardship to the shippers who were discriminated against. The advantages that the favored shippers reaped helped some of them to get monopoly control in their industries. From this it may be seen that the presence of indirect costs in industry has greatly increased the problems of social control, for the control of public service companies, such as the railroads, and the control of monopolies or trusts are among the most serious problems of the day.

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LESSON A-II. EDUCATION AS ENCOURAGED BY INDUSTRY.<sup>1</sup>

In the mining town of Shenandoah, Pa., in the late eighties there was an editor who had the enterprise to publish in his paper every day lessons on mining. He read the leading technical books published in America and Europe on mining subjects and made a summary of them for the benefit of his readers. The lessons were very widely read, especially by foremen in the mines. These foremen were required to pass an examination before a State board, and the lessons furnished them with the information which they needed concerning methods of mining and necessary safety devices.

## THE RISE OF THE CORRESPONDENCE SCHOOL.

The lessons became so popular that the editor revised them and put them in the form of a book. He also organized an institution which gave lessons by correspondence. This was the beginning of an important educational movement. A corporation took over the lessons on mining and added lessons on other technical subjects, until finally it was prepared to give courses in electrical and civil engineering, in many branches of mechanics, in business subjects, such as accounting and commercial law, and in similar subjects.

The success of the correspondence school that grew up in this way was so great that a number of others were established in different parts of the country. To-day one sees in every popular magazine the advertisements of courses given by such schools. These advertisements always emphasize the fact that advancement in business and increase in wages depend on training. The ordinary man who has only a common school education is told that he can not expect to rise in his trade unless he takes special courses to improve his training.

## CORPORATIONS PROVIDE TRAINING.

The importance of special training is often recognized by those who employ men, and prompts them to provide such training and to require it of their employees. For example, the railroad finds that it can improve the firing of its engines by distributing to all the firemen a pamphlet giving directions which must be followed in keeping up a strong fire. The unintelligent fireman throws the coal on the fire in such a way that fresh coal is heaped in thick

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<sup>1</sup> This lesson was prepared by Charles H. Judd. It shows how the complex demand of modern industrial life have led men to see the importance of education. The number of schools has increased and the varieties of education offered have been greatly multiplied.



layers in the middle of the grate. The book of instructions gives a diagram showing the fireman how to throw the shovelfuls first to one corner of the fire box and then to another in such a way that an even, steady fire is kept up over the whole grate.

The railroad is interested in making its firemen intelligent because it is a matter of dollars saved for the road. The following statement is made by one writer who comments on the importance of training firemen:

#### ECONOMIES FROM INTELLIGENT FIRING.

That correct firing represents a direct money value to the railroad is shown by the experience of an engineer with two firemen. As the engineer describes it, the first man commenced work "as if his father owned the mine that supplied the coal," and in 1 hour and 55 minutes, with the wind behind, shoveled over 8,000 pounds of coal from the tender into the fire box. The following day the engineer made the same run with the same engine and train, with about the same weather conditions, but with a different fireman. He made the terminal on time with a total consumption of approximately 4,500 pounds. This represented a saving in coal of 3,500 pounds, or, at the rate of \$3 a ton, an economy of \$5.25.

The fact is that the successful handling of any complex modern machine requires a special training which was not called for in the days of simpler hand labor.

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1. Are miners more in need of lessons than workers in other industries?
  2. Name as many State examining boards as you can. Why should people be required to pass State examinations?
  3. Find and discuss some of the advertisements of correspondence schools.
  4. Wherein are the subjects taught in your school different from those taught by correspondence schools? How do you account for this difference?
  5. "Business colleges" flourished in this country before high schools offered commercial courses, and before the universities organized technical courses in business. Find out what studies were taken up in these business colleges. Should this work be offered by the public schools?
  6. Find out about different special schools of higher and lower grades conducted by employers. Do they pay as part of the business?
  7. Write to some college or university and procure a copy of its catalogue. Notice the wide range of courses offered. Find out whether it is very much wider than the range which was offered 50 years ago.
  8. Get a circular or catalogue from same university school of business training and compare it with the statement of some "business college" of your community. Are the two institutions attempting to prepare for similar tasks in business?

## AIR BRAKES.

Take another example from the railroad. In 1887 the Westinghouse quick-action, triple-valve, automatic air brake was perfected. Before that time trains had been brought to a stop by pulling a brake against the car wheels with a lever or wheel and chain operated by hand. Anyone who rode on trains during the eighties will remember how the brakeman went to the platform of each car as the train approached a station and by sheer strength wound up the brake, just as one sometimes sees nowadays the motorman on a small street car wind up the brake. It did not require much training to put on that kind of a simple brake. Strength rather than intelligence was called for. To-day the muscular brakeman has disappeared. In the meantime it has become necessary that all the men on the train crew know something about the complicated mechanical device which has replaced the old-fashioned wheel and chain. The railroad has accordingly rigged up what is known as a demonstration car. In this car the workings of the triple-valve brake are just shown as in the physics laboratory the laws of gravity or of expansion of gases are demonstrated. To the laboratory on wheels come the trainmen to learn about brakes. The complex mechanism demands a special training.

## AGRICULTURE AND SPECIAL TRAINING.

It is not in the skilled trades alone that a new type of education is beginning to appear. The urgent demands of modern life are

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1. Give other examples of the fact that machinery has created a demand for intelligence of a higher degree and done away with the demand for physical strength.

2. Why is a demonstration car necessary? Why can the men not learn by using ordinary brakes on trains?

3. There have appeared from time to time, especially in earlier years, sharp criticisms of education as disqualifying men for business pursuits. Find out what were the chief arguments of these criticisms. Were they arguments against the need of education or against the kind of education given?

4. Why does the existence of national and even international interdependence make it necessary to resort to a greater use of education?

5. Before the time of the industrial revolution, and, indeed, to some extent to-day, the apprenticeship system was used as a method of training for business. Show that it would be a satisfactory system in the simple, small-scale industry but would be quite unable to train for leadership in our modern complex large-scale industries.

making themselves felt in such simple industries as agriculture. The time was when it was assumed that anybody could be a successful farmer. All that he needed was sufficient strength to till the soil. To-day we think in different terms. Great schools of agriculture have been set up, and they give instruction both to those who expect to take up farming and to those already at work in the fields. State universities conduct short courses to which the farmers go during the periods when they are free from the demands of their farms. These courses are making mechanics and scientists out of the tillers of the soil.

Methods of cultivation and methods of harvesting have undergone radical transformations. The business of the farm has become in a large measure a problem of running machinery, and the short courses given to farmers include courses in farm mechanics. Then, too, the farmer is told about experiments and Government reports which deal with the methods of protecting crops against weeds and against animal pests. If he is a dairyman, he must read another set of bulletins which have to do with animal husbandry and the methods of protecting his cattle against diseases.

#### THE FARMER MUST STUDY MARKETING.

The business of marketing crops has become a complex problem. Crops must be dealt with according to commercial standards. It is not profitable to-day to send to market a miscella-

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1. Through the public library find out how one can get the titles of recent books on any subject.
  2. How does one learn where to get the kind of training one needs for some special vocation?
  3. "The education of a farmer must be more detailed and scientific in the degree in which intensive farming replaces extensive farming." What is the meaning of the foregoing statement?
  4. "Standardization of products is characteristic of modern industry." Give examples other than those chosen from agriculture in support of this statement.
  5. Find some book or magazine dealing with business subjects and tell the class what it contains.
  6. Are the telephone and the telegraph educational agencies in part? What is meant by saying machine industry has aided progress in education?
  7. "The railroad is one of our greatest educational agencies." Is this true?

neous lot of products which have not been carefully sorted and selected. The farmer must standardize his products. He has to be skillful, too, in selecting the time for sales. The daily paper with its reports of market prices has become almost as much a part of his reading as it is of the reading of the city broker or wholesale dealer. In short, the demand for trained intelligence and continued study is quite as apparent in agriculture as it is in manufacturing establishments.

#### THE BROAD MEANING OF EDUCATION.

Such examples give to the word "education" a broader meaning than many people think of when they use the word. To be educated used to mean to be ready to enter one of the higher professions. The earliest institutions of higher learning were all of the purely literary type.

Harvard, which was the first of these institutions, began by preparing its students almost exclusively for the ministry. During the first 100 years of its history 60 per cent of all its graduates entered that profession. Later, law and medicine took their places along with theology as important lines of training. But these newer professions like the older were in early years based on a literary curriculum.

In recent years all this has changed. Even the traditional professions have turned to the natural and social sciences.

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1. Try to state, in general terms, what industry owes to science. Why should we be interested in the progress of industry?
  2. Try to state, in general terms, what science owes to industry. Why should we be interested in the progress of science?
  3. Look up the history of some of the earliest American institutions of higher learning. Were they coeducational? Where were they located and why? How were they supported? What is the present situation in each of these respects?
  4. What changes have taken place in recent years in the requirements for admission to college? Why do colleges have such requirements?
  5. What division of the Government issues reports on education?
  6. When a new social demand arises for a type of education which has not been common, how does it make itself felt?
  7. Review lesson A-8 with the purpose of discovering an explanation of the fact that collegiate or university schools of commerce have arisen only in the past 50 years.
  8. Find out whether the Government maintains any agencies for the scientific testing of materials. There were no such agencies 500 years ago. Why not?

## SCHOOLS OF TECHNOLOGY AND BUSINESS.

More striking, however, is the fact that a host of new practical professions have arisen, and with them new courses of study. Courses in engineering and agriculture are now numerous. There are courses in business and other strictly practical subjects. The number of such courses offered by American universities to-day would have astonished the college graduate of two generations ago.

A recent Government report indicates that even in the so-called liberal arts colleges about 30 per cent of the graduates are preparing for business careers. Instead of there being 60 per cent or more of college students who are preparing to enter the ranks of the clergy, the number going into that profession has diminished until it is now less than 10 per cent.

In other words, the whole scheme of higher education in this country has been radically modified. A social demand has arisen for a new type of training. Business opportunities and technological opportunities are so exacting that a very large part of the energy of the Nation is now devoted to meeting these demands.

## STUDIES CARRIED ON WITHIN INDUSTRIES.

Another evidence of the same trend is found in the fact that a great deal of energy is expended to-day in scientific investigations which are made within the industries themselves. It is not an uncommon sight to see in a factory a laboratory with a trained scientist in charge, carrying on experiments for the improvement of the business. Better methods of making steel and iron, for example, have been worked out by great steel mills. The scientific staff of such an establishment is of the greatest importance in the eyes of the management.

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1. Visit some industrial laboratory and write out a description of it. If this is not possible, read some account of Mr. Edison's laboratory.
  2. How can lists of Government publications be secured? On what subjects does the Government print reports? Does the business manager need to keep in touch with any of these Government reports?
  3. What means are adopted by our Government to acquaint citizens with Government policies?
  4. Why should illiteracy be higher in the United States than it is in Germany; France, or England?
  5. Describe the various types of periodicals with which you are familiar and state the part played in public life by each type.
  6. Make a list of trade journals or professional journals in a field in which you are personally interested.

## GENERAL EDUCATION ALSO MORE COMMON.

The impression may arise from what has been said that education has grown merely in the direction of technology and science. This is, however, only part of the story. It is true that technology has exercised a powerful influence over recent tendencies in thought and education, but the ultimate effect has been to create a broad demand for power on the part of all people to read and to come into contact with ideas, each for himself. A rapid spread of general intelligence is, therefore, an accompaniment of the movement discussed in earlier paragraphs. Reading and writing used to be accomplishments; they are now necessities. They are necessities because of the superlative importance of general intelligence even more than because of the need of technical training, though these are by no means antagonistic.

## IMPORTANCE OF LITERACY IN A DEMOCRACY.

The vast importance of a high level of general intelligence will be understood if we think of the experience of a country where general education is lacking. In recent years there have existed in Mexico the strongest prejudices against the United States. These prejudices were fostered by political leaders who took advantage of the general lack of information to tell the people all sorts of stories with regard to the designs which the United States had on Mexican territory and Mexican wealth.

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1. What is the purpose of compulsory education? What are the requirements of the compulsory law in your State? How is the law enforced?

2. What other facts regarding Mexico besides the existence of prejudice against the United States can be traced to illiteracy?

3. What facts about Russia can be traced to a similar condition in that country?

4. Show that illiteracy in a republic is less tolerable than it would be under an autocratic form of government.

5. What special departments do the newspapers of your own town publish? Which of these could be described as giving instruction?

6. Make a list of the ways in which the printing press has "widened man's horizon." Has it contributed to wider markets? What do you mean by wider markets?

7. What steps are taken by communities other than the education of children to eradicate illiteracy?

8. What is child labor legislation and why does the Federal Government take a hand in such legislation?



These political leaders gathered together groups of the natives on the street corners and talked to them about the injuries which they asserted the United States was inflicting on Mexico. It made no difference at all that most of these stories were entirely untrue, because the ordinary avenues of information and discussion were not open to the people who listened to the stories.

More than three-quarters of the people of 10 years of age or over in Mexico are unable to read and write. The importance of this fact in the life of a republic can not be overestimated. Suppose that only one person in four in the United States could read. It would be almost impossible to reach communities with any clear statement of the policies of the Government or of our international relations. As a matter of fact, 92 persons out of every 100 in our country are able to read. Even this figure is surpassed by some of the European countries, but there is a sufficient body of intelligence in our country to make possible an appeal to public opinion through the newspapers and magazines.

#### THE CONTRIBUTION MADE BY THE PRINTING PRESS.

Our country has gone further than any other in developing the avenues for such an appeal through the public press. The census of 1910 reports that there were in the United States over 18,000 periodicals of all sorts. Of this number 2,226 were daily papers. The total number of periodicals published in the whole world amounts to less than 50,000. Germany had before the war 7,000; Great Britain, 9,000; Japan, 4,300, and other countries smaller numbers. These figures show the extent to which our country has developed the opportunity for public discussion and for public information on all matters of community and national life. The type of thinking which is common in our country can be understood only when these facts are taken into account.

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## Chapter IV.

### NATIONAL CONTROL AND FOOD CONSERVATION.

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Lesson A-12 introduces the study of the participation of the National Government in the economic organization of the country. The history of each of the ten executive departments, whose heads form the President's Cabinet, is traced, and the duties of their bureaus are briefly set forth. The departments are organized as great business establishments, and their activities include practically every line of human effort. Nearly six hundred thousand civilian employees are on the Government rolls, not including those of the railroads, which are now under national control.

Lesson A-13 describes a function of the National Government which is a direct outcome of the necessities of war. In normal times national control does not extend to the food supply any further than is necessary to protect the people against adulteration and fraud. Extraordinary difficulties require extraordinary remedies, however, and special provision is required to insure the production of unusual quantities of food and to see that the supplies at hand are transported and sold under proper conditions. The powers conferred on the Food Administration are very wide in scope but they are definitely limited to the period of the war.

Lesson A-14 is designed to show why and how the people of this country are asked to save certain foods by the use of substitutes. Our Allies are depending on us for wheat, meat, fats, and sugar, and we must send them all we can possibly spare. The proposed substitutions in our diet will not result in undernutrition nor cause serious inconvenience.

Lesson A-15 points out the need of business organization in home life. The housewife is ordinarily the disbursing officer of the family income, and upon her rests the responsibility for those economies which are now of national importance. Special training is desirable, but care and good judgment in making purchases and an appreciation that economy is a national duty at this time are essential.

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#### LESSON A-12. HISTORY OF THE FEDERAL DEPARTMENTS.

By R. M. TRYON,

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The National Government includes 10 executive departments, which under the President carry out the acts of Congress and organize the country for the purposes of national life. The heads of these departments are members of the President's Cabinet.

When the Constitution of the United States was adopted in 1787, Congress was given power to establish certain administration departments. Among the first laws enacted by the new Government when it was organized was the one establishing three departments, known as the Department of State, the Treasury Department, and the Department of War. These departments had existed since 1781 in the older Confederation. A little later the office of Attorney General was created, thus making a total of four members of the body which President Washington called

together from time to time for the purpose of consultation. An unsuccessful attempt was made in 1789 to establish a department to have charge of domestic or home affairs, the work of such a department being finally turned over to the Department of State.

The law placed the power to appoint the secretaries or heads of the departments in the hands of the President, giving the Senate the power to confirm or reject.

#### THE WORK DONE BY THE ORIGINAL DEPARTMENTS.

While the Department of State was carried over from the Confederation, where the office was known as the Department of Foreign Affairs, the act of 1789 added many duties not originally performed by the Secretary of Foreign Affairs, chief among which were those having to do with internal relations. For example, the Secretary of State was placed in charge of the correspondence with Federal officers of justice, the direction of the Territories, the supervision of the census, and the records of patents and copyrights. The chief duties, however, of the head of the State Department at this time were those relating to foreign affairs, such as making treaties and directing the work of United States ministers, ambassadors, and consuls in foreign countries.

The general duties of the Secretary of the Treasury as prescribed by the law of 1789 and carried on by that department now are the following: To collect the public revenues and to digest and prepare plans for the improvement and management thereof, and for the support of the public credit; to make estimates of receipts and expenditures; to grant warrants for moneys appropriated; to provide for the keeping of proper accounts; and to make reports.

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1. Find out who are the heads of the Federal Departments at the present time.

2. Note the States from which they come. Why does the President aim to draw his Cabinet from different parts of the country?

3. What form of government existed in America before the adoption of the Constitution?

4. Find out about the constitutional convention. Where did it meet? How long was it in session? Who were the most prominent participants?

5. Who were the members of the first Cabinet?

6. It is sometimes said that the English Government is more directly responsive to the will of the people than is ours. Explain the meaning of this statement.

7. What criticism is the President making to-day of the organization of the German Government?

8. What is the difference between ministers, ambassadors, and consuls?

Other duties, such as steamboat inspection, coast and geodetic surveys, immigration service, navigation and commerce, standards, statistics, public law, and pensions, were originally assigned to this department, but have since been transferred to other departments.

The chief business of the Treasury Department under Alexander Hamilton was to establish a national credit, to arrange for the payment of what was at that time a great national debt of about \$75,000,000, and to secure enough money for the current expenses of the Government. To the accomplishment of each of these tasks Hamilton gave his undivided attention, and before the end of his career as Secretary of the Treasury he had done his work so well that Webster could later say of him: "He smote the rock of national resources, and abundant streams of revenue gushed forth. He touched the dead corpse of public credit, and it sprang upon its feet."

The law defining the duties of the Secretary of War was somewhat general. He was simply enjoined to perform such duties as should be placed upon him from time to time by the President relative to military commissions, military forces, the warlike stores of the United States, and other matters respecting military affairs. When the office was created in 1789 naval affairs were placed under its control, but were soon turned over to a separate department. Other duties somewhat unrelated to the department had to be assumed from time to time until additional departments were created to take them over. Chief among these were pensions and Indian affairs. The chief concern of this department has, of course, always been with raising, maintaining,

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1. During the present war the Treasury Department has had the problem of maintaining national credit. This has been done in several ways. What are they?

2. Find from history what the first Secretary of the Treasury did.

3. What would have happened if the young Republic had repudiated its debts as was suggested in some quarters?

4. Do the rules of personal credit apply to governments?

5. What has happened to the credit of Russia? Of Germany?

6. How do the facts with regard to national credit show themselves?

7. Who is the commander in chief of the Army and Navy?

8. Is the Secretary of War an Army officer? Why is the situation what it is?

9. Selecting one duty of the War Department for special comment, why should it have charge of certain bridges? What war time precautions have been adopted?

and equipping an army, especially in times of war. In times of peace the department has busied itself with looking after arsenals, coast defenses, military parks, bridges over navigable rivers, rivers and harbors, and improvements in Army equipment.

#### DEPARTMENT OF JUSTICE.

The office of Attorney General was created in 1789, along with the offices of Secretary of State, Secretary of the Treasury, and Secretary of War, but the Attorney General was not made head of a department until 1870, when the Department of Justice was created. He was, however, from the very beginning recognized as a member of the President's Cabinet. His influence in the Cabinet was very meager for some time, since the original law did not require his residence at the seat of government. Presidents Madison, Monroe, and Jackson all attempted to get Congress to place the office on an equal footing with the other Cabinet offices. For some reason Congress failed to heed their recommendations.

During the Civil War decade (1860-1870) so many legal problems arose that it was necessary to employ a great amount of assistance for the Attorney General. In 1870 Congress decided to create a Department of Justice to take over the legal phase of the work connected with other departments, and since that date the Attorney General has been the head of the department on an equality with the other members of the Cabinet. The priority of the department was acknowledged in 1886, when its head was definitely recognized as fourth in the line of possible successors to the Presidency in case of the removal, death, resignation, or inability of the President and the Vice President.

#### THE NAVY DEPARTMENT.

During the two administrations of Washington and the first years of that of John Adams the Navy was under the management

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1. What need of an attorney has the Government which makes the laws?
  2. Can a citizen sue the National Government?
  3. What is the highest court in the country?
  4. What is the part played by the National courts in the government of the country?
  5. What are the special legal problems that arise in war times?
  6. What is the present succession of officers in filling the presidency?
  7. What are the cases in our history in which such succession has actually taken place?
  8. What has been the policy of our Government regarding participation in foreign matters? What is the relation of this policy to the early history of our Navy?

of the Secretary of War. The arrangement proved cumbersome, and it was soon recognized by Congress that there was enough business connected with the Navy to demand a separate department. So, in 1798, when war with France seemed probable, such a department was established, and its head made a Cabinet member on equal footing with the four other members.

There was much opposition to a navy in the early years of our country's history. In fact, it was thought that the Nation might be able to escape the burden. However, naval affairs could not long remain unimportant. So, in 1794, to protect the commerce of the United States against the Mediterranean pirates, Congress provided for the building of six Government vessels. Washington frequently urged the necessity of building up a strong navy, and his successor, John Adams, had long been an ardent advocate of this policy. Consequently, it is not surprising that early in Adams's administration a law was enacted creating the Department of the Navy. In spite of the impending danger of a war with France, this law was not placed upon the statute books without considerable opposition.

#### POST OFFICE DEPARTMENT.

The Post Office Department was not a new creation of the first Congress under the Constitution. In fact, the office was created back in 1775, a few days after the Declaration of Independence was signed. Benjamin Franklin, who had served from 1753 to 1774 as Deputy Postmaster General under the colonial organization, was the first man to hold the office under the newly created Nation. The department had a continued existence down to the organization of the Government under the Constitution. There seemed to be no reason in 1789 for radical changes in the postal arrangements; so Congress voted to establish the Post Office Department on about the same footing as that which had existed in 1775.

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1. Which are the largest navies in the world?
  2. What phases of the present war tend to emphasize the importance of maintaining a navy?
  3. What does a battleship cost? How long does it take to build one?
  4. How large is our Navy at the present time?
  5. Find out how much business is done by your local post office.
  6. Who appoints the postmaster?
  7. How is rural mail delivery managed?
  8. Does the post office pay for itself through the sale of stamps?
  9. How long have we had a parcel post? What about other countries?

There seems to have been no thought in the beginning of considering the Postmaster General as a member of the President's Cabinet, the office being considered a branch of the Treasury Department. However, because of the great number of officers under his control, the Postmaster General could become a powerful political influence. Jackson saw the political possibilities of the office and deliberately made the Postmaster General a member of his Cabinet, a position he has since held. The office was not made an executive department by law until 1874.

#### DEPARTMENT OF THE INTERIOR.

While there was a long-felt need for a Department of the Interior, or Home Department, as it was often designated, the reality did not come until 1849. Even before that date the Departments of State, Treasury, and War were overburdened with work. Each had taken on new duties from time to time, until the burden had become more than could be borne. The Treasury Department was looking after the public domain, the War Department after Indian affairs and pensions, and the State Department after patents and copyrights. None of these duties seemed to bear any relation to the real work of the department administering it. To relieve these overburdened departments a plan for a new department was drawn up by the members of President Madison's Cabinet at a meeting in which the general administrative work of the cabinet departments was carefully considered. Nothing came from this recommendation. Both Presidents John Quincy Adams and Andrew Jackson attempted to get a new department established. It was not, however, until the Mexican War and the acquisition of the Oregon country increased the work connected with the public domain and Indian affairs that Congress established a new

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1. There is frequent occasion in the work of the Department of the Interior to discuss the relation of States to the National Government. Find out some cases where States have objected to National participation in conservation movements and discuss these cases.

2. Find out the conditions under which the Government has distributed the public domain.

3. What is the substitute for pensions adopted in the present war? Discuss the advantages of the two plans.

4. What are the conditions for the issuance of copyrights? Of patents?

5. What is an Indian reservation?

6. Why should the organization of the Department of the Interior have become more imperative after the Mexican War?

7. Why should patents go over to this department?



department, the need of which had been evident to all those closely connected with the work of the Cabinet departments since the organization of the Government under the Constitution.

On the passage of the law creating it the Department of the Interior was immediately organized. The Patent Office was transferred from the State Department; the General Land Office and Pension Bureau from the Treasury Department, and Indian Affairs from the War Department. Later the Bureau of Education, Geological Survey, the Bureau of Labor, Reclamation Service, the Bureau of Mines, National Parks Service, and the Alaska Engineering Commission were added.

#### DEPARTMENT OF AGRICULTURE.

It was almost exactly a century after the Government was inaugurated that the Secretaryship of Agriculture was established by law, on February 9, 1889. The demand for such recognition of the agricultural interests of the country came from without rather than from within Governmental circles. Local associations for assisting farmers began to appear in the United States soon after the close of the Revolution. By 1800 there were over a dozen such associations and societies; in 1852 there were about 300 in 31 States and 5 Territories. By 1862, when a division was first organized and placed in charge of a commissioner, there were nearly 1,000 such societies. At the proper time these organizations lent their influence in procuring legislation establishing the Department of Agriculture.

While such legislation was not procured until 1862, and the head of the department was not elevated to a position in the Cabinet until 1889, this does not imply that nothing had been done for agriculture by the National Government before those

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1. The sciences are greatly encouraged by the Department of Agriculture. Is this a legitimate service of the Government?

2. How does an association of any kind proceed to get what it wants from the Government? Describe certain legitimate methods and certain methods that are not legitimate.

3. What activities of the Department of Agriculture can you find which affect the community in which you live?

4. In the same way, discover what help the State gives to agriculture and to other types of economic activity.

4. What part does the city or town play in economic matters in general and in agriculture?

6. Much of the activity of National Departments is purely in the line of distributing information. Find out from the library some of the examples of such information.



dates. Early in the nation's history the United States consuls abroad reported to the State Department much information of value to the farmer. In 1819 the Secretary of the Treasury, W. H. Crawford, asked the American consuls to procure useful seeds and inventions from abroad, and the same year Congress created a committee on agriculture. When the Patent Office was reorganized in 1836 and a commissioner placed in charge, it became of great value to the farmer, since so many patents related to farming, and the office was obliged to collect and report agricultural statistics. Such work was continued by this office until the department was established in 1862.

In June, 1852, the United States Agricultural Society was organized. It at once began a campaign for the establishment of a Department of Agriculture, with a secretary of Cabinet rank at its head. This campaign was waged from year to year, until the results which it sought were finally accomplished.

The department to-day has general jurisdiction of an advisory character over the agricultural affairs of the country. Some idea of the work it performs may be gained from the list of bureaus and offices under its jurisdiction. They are: Office of Farm Management, Weather Bureau, Bureau of Animal Industry, Bureau of Plant Industry, Forest Service, Bureau of Chemistry, Bureau of Soils, Bureau of Entomology, Bureau of Biological Survey, Bureau of Crop Estimates, States Relations Service, Office of Public Roads and Rural Engineering, and Bureau of Markets. Besides directing the work of these bureaus the department supervises all the agricultural experiment stations receiving Federal aid. In its administration of the pure-food law, its work comes very close to the lives of all citizens.

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1. What is the value of the Weather Bureau to the economic life of the Nation? To its social activities in general?
  2. Find out about the pure-food laws and the methods of their enforcement.
  3. This country has always emphasized in its educational system and in its public organization commerce as distinguished from labor. What is the contrast and why the emphasis on commerce?
  4. What current conditions are laying stress on labor?
  5. What steps does our Government take outside of the work of the Department of Labor in the way of dealing with labor?
  6. Are the labor organizations political organizations? Do they influence elections?
  7. What is the relation of immigration to labor?

**THE DEPARTMENT OF COMMERCE AND THE DEPARTMENT OF LABOR.**

After the creation of the Department of Agriculture in 1862, those interested in labor, commerce, and manufacturing had what they considered a convincing argument for the establishment of a new department. For they said, Why should one class of workers be represented in the Cabinet and other classes be left out? It was not clear to merchants, manufacturers, miners, and organized labor generally why they should not be granted representation in the national administration similar to that granted to the farmer. So from 1862 to 1902 Congress was besieged with petitions and bills on behalf of departments of commerce, manufactures, mines and mining industries, navigation, and labor.

In 1888, when the Department of Agriculture was about to be raised to the rank of a Cabinet position, there was such a demand from labor organizations for a similar department of labor that Congress, to satisfy this demand, took the Bureau of Labor out of the Interior Department and gave it an independent existence. This, however, did not satisfy the labor leaders, so between 1896 and 1903 many bills were introduced in Congress providing for a department of commerce, labor, and manufactures. The cause was greatly advanced by President Roosevelt when he devoted a long section of his first annual message to the subject and recommended a Cabinet officer to be known as Secretary of Commerce and Industries. This name, however, was not satisfactory to the Senate, which decided to recognize labor in the title, thus designating the department as the Department of Commerce and Labor. In spite of objections from labor leaders the department

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1. Why does the country need a census?
  2. How often is it taken? What kinds of information does it record?
  3. The control of manufactories and corporations has become in recent years more and more necessary. By consulting reports of the Department of Commerce, discover why this is so.
  4. How is the work of all the executive departments paid for?
  5. What are the differences in duties and powers between the executive branch and the other branches of the Government?
  6. Are there other departments which in your judgment should be added to the National Government?
  7. In European countries special ministries have been created to take care of war needs. Should we have special Cabinet officers for like reasons?

was finally created with this name. The new department took over the Bureau of Census from the Department of the Interior the Bureau of Foreign Commerce from the State Department, and the Department of Labor, which had been an independent organization; the Bureau of Corporations and the Bureau of Manufactures were new creations. Labor finally gained its fight for a separate department in 1913, when the tenth member was added to the President's official family, and there is now a Secretary of Commerce and a Secretary of Labor.

As organized to-day, the chief functions of the Department of Commerce are to foster, develop, and promote foreign and domestic commerce, the mining, manufacturing, and shipping interests, and the transportation facilities of the United States.

The Department of Labor was created to foster, promote, and develop the welfare of the wage earners of the United States and to advance their opportunities for profitable employment. The names of the four bureaus in the department suggest the work they do. They are: Bureau of Labor Statistics, Bureau of Immigration, Bureau of Naturalization, and Children's Bureau. These were all transferred from the old Department of Commerce and Labor when the Department of Labor was given a separate existence.

Such in brief is the story of the establishment of the ten executive and administrative departments of our Government, the heads of which now form the President's Cabinet. The increase from three departments in 1795 to ten in 1917 indicates the continued efforts of Congress to adjust the administrative facilities of the Government to its growing needs. The multitude of duties performed by the ten departments over which the Cabinet members preside evidences the fact that the Government to-day is administered for as well as by the people for whom it exists.

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LESSON A-13. THE UNITED STATES FOOD ADMINISTRATION.<sup>1</sup>

When the little colony of Pilgrims at Plymouth Bay was struggling through the hard winter which followed their landing, it was not difficult to make the people understand that economy of food is a matter in which the community is vitally interested. When George Washington and his troops were living through the disheartening winter at Valley Forge, there was no difficulty in getting attention for the fact that the fate of a nation is linked with the food supply of its army. When the people of the United States heard of the starvation of Belgium and Poland after the great armies had occupied these countries in the present war, they had no hesitation in contributing money and food to the starving people.

Needs like those of Plymouth Bay and Valley Forge and Belgium and Poland have become world-wide. There is a scarcity of food, which means that many a man and woman and child will this winter be without enough food to keep alive. Millions more will live on the verge of starvation, struggling each day to keep up enough vitality to meet the day's tasks. The great armies in Europe will be provided for by their home countries as best may be, in the hope that they at least will have the strength to endure and to strike the enemy.

## FOOD CONTROL UNIVERSAL.

It is little wonder that every civilized nation of Europe and the two great countries of North America have organized within their governments special departments to muster every resource of the nation in meeting the crisis. Our Nation, which has more than enough food for its own needs, must recognize that it is a part of a world not supplied with enough food for all. Our Nation is called on to share with our Allies because the shortage is a world shortage, and no civilized nation can pass through the coming winter forgetful of the starving nations of Europe.

## FOOD ADMINISTRATION IN THE UNITED STATES.

Our own National Government took no steps to organize a food administration until some time after war was declared. Up

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<sup>1</sup> This lesson was prepared by the Public Information Division of the United States Food Administration. It gives in brief outline a sketch of the organization of the United States Food Administration. There is a large body of printed material issued in the form of pamphlets, and there is a daily press service intended to keep the people of the country informed as to the activities of the Administration. Some references are given at the end of this lesson.

to April 6, 1917, we had been shipping much more than usual to Europe and had begun to feel the effects of the drain on our resources. Prices had reached a higher level than ever before. Certain supplies that we had always imported without hindrance in times of peace began to be difficult to procure.

The declaration of war had as one of its immediate causes the relentless destruction of ships by the German submarines. This was gradually making it more and more difficult for this country to procure the necessities of life or to send supplies to the nations of Europe which needed them. We could not see people starve without putting forth every effort to meet the situation, and we were threatened with ultimate separation from those parts of the world on which we ourselves depend. Our Government made every effort to show Germany that her course was contrary to treaties and to the principles of civilization. When Germany refused to listen, war was declared.

With the declaration of war came the evident need for more vigorous steps on the part of our Government to promote the production of food and supervise its better distribution and its more careful use.

Our National Government has to some extent, even in times of peace, taken a hand in matters of the nation's food supply. There are pure-food laws designed to protect communities against those who would make profit by adulterating and misrepresenting the quality of food. These must be enforced and their effects studied. There are at all times agricultural problems and problems of transportation which require study by experts whom only the strong central Government of the Nation can provide. The various departments of our National and local Governments, even before the war, were dealing in a regular routine way with many of these problems.

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1. Look up the historical references in the first paragraph for the purpose of finding out why food was scarce at the times mentioned.

2. What are the modern protections against famine? Enumerate at least four of the modern safeguards to the food supply of civilization which have been partially broken down by this war.

3. How does an army get its food supply? Is the situation different to-day from the situation in the time of Cæsar?

4. Germany organized food control and began rationing her people before other countries did. Discuss the reasons why this was possible. Is it desirable for a nation to have this possibility?

5. Review the course of our country with regard to German submarine warfare. Why was that kind of warfare illegal? What was the German defense?

With the entrance of the United States into war, the problem became one of adopting special measures. There was need of a vigorous campaign to inform the country of the starving condition of Europe and of the danger which the future has in store. There was need of special efforts to see that unusual supplies of food are produced and to make sure that the supplies at hand are transported and sold under proper conditions. The way to deal with famine is to meet it by preparations made far in advance.

The President took preliminary steps on May 17, 1917, and asked Herbert Hoover, who had been in Belgium in charge of the relief work in that country, to organize a food administration of the United States.

Following this action on the part of the President, Congress passed a bill which became a law on August 10, 1917. The bill bears the title, "An act to provide further for the national security and defense by encouraging the production, conserving the supply, and controlling the distribution of food products and fuel."

#### MR. HOOVER'S STATEMENT.

The purpose of the Food Administration thus authorized by national law was described by Mr. Hoover as follows:

The hopes of the Food Administration are threefold. First, to so guide the trade in the fundamental food commodities as to eliminate vicious speculation, extortion, and wasteful practices and to stabilize prices in the essential staples; second, to guard our exports so that against the world's shortage we retain sufficient supplies for our own people and to cooperate with the allies to prevent inflation of prices; and, third, that we stimulate in every manner within our power the saving of our food in order that we may increase exports to our allies to a point

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1. Can you give evidences that the National Government is interested in the food production in your own community?

2. What are some of the provisions of the pure-food law? Why should such provisions be necessary?

3. The Department of Agriculture is one of the largest and most fully equipped in our Government. Why should agriculture receive more national attention than other industries?

4. What kinds of control does society exercise over agriculture through the prices of foods?

5. What are some of the forms of national control over transportation?

6. It has often been suggested that Congress might have dealt with the food problem through one of its constituted departments. Discuss this suggestion.

7. Find out about the work of the Belgian relief.



which will enable them properly to provision their armies and to feed their peoples during the coming winter.

#### POWERS CONFERRED ON THE PRESIDENT.

The powers conferred on the Food Administration by the law are in the form of powers given to the President to be exercised during the period of the war. The powers are very wide in scope, but are definitely limited both in their applications and in the time during which they may be exercised. The moment peace is declared all these powers disappear and only the former peace-time powers remain.

The persons over whom the President may exercise these great temporary powers are those who deal in a large way with the necessities of life enumerated in the bill as "foods, feeds, fuel, including fuel oil and natural gas, and fertilizer and fertilizer ingredients, tools, utensils, implements, machinery and equipment required for the actual production of foods, feeds, and fuel."

Small dealers and farmers are explicitly excluded from the direct control of the Food Administration, the line being drawn so that only those dealers whose annual business amounts to \$100,000 are directly under the President's control.

The President is given control over the large dealers by being empowered to license them. The large baker, for example, who makes bread may be licensed to make and sell under certain conditions. Through the definition of these conditions the President can control the large bakers, and so on through the list of all large dealers in food.

The President is authorized to prevent hoarding. He is given power to deal with anyone who hoards necessities, destroys them, or interferes with their transportation. He may take by requisition what is needed by the Army and the Navy.

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1. Note in the title of the bill the different objects at which Congress aimed, and show in each case what Mr. Hoover's interpretation of the different tasks is.

2. What has happened in your own community in each line?

3. What actual shortages has your community experienced? Can you give a definite explanation of each case?

4. Draw a distinction between those commodities produced at home and those imported into your section of the country either from abroad or from other parts of the country. What is the relation of this distinction to shortages?

5. What does such a distinction suggest about the direction in which wise purchases should be made?



One of the most important powers given the President is that of going into the market and purchasing wheat, flour, meal, beans, and potatoes. The purchase can be made on a scale so great that, if necessary, the National Government will have in hand enough of any of the important commodities named to control the market.

The President is also authorized to stimulate the cultivation of crops and the production of food. Wheat is so important that he is given special powers for the purpose of stimulating its production. He is authorized to guarantee a price for the grain. In enacting this clause of the law Congress itself guaranteed a price of \$2 per bushel for wheat in 1918.

The bill also provides that "no foods, fruits, food material, or feed shall be used in the production of distilled spirits for beverage purposes."

The President is given power to control the price and production of fuels.

#### THE ORGANIZATION OF THE FOOD ADMINISTRATION.

In carrying out the powers given him in this bill the President continued the organization which he had originated in May, 1917. He made Mr. Hoover the head of an organization known as the United States Food Administration. He receives from Mr. Hoover and a large staff of assistants whom Mr. Hoover has gathered around him recommendations as to the steps necessary for the execution of the law, and through this same organization the President operates in executing the law.

The Food Administration differs from the Department of the Interior or Agriculture or Labor in that it is a temporary branch of the Government. It gets all of its powers through Executive order directly from the President. It is a special organization set up for the purpose of meeting a definite need.

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1. Why should Congress be less ready to deal with the small dealers than with the large? Discuss this matter from the point of view of a demand for a successful execution of the law.

2. In the countries of Europe there is much more complete enforcement of the restrictions than we have in this country. Why?

3. Many of the arrangements brought about by the Food Administration have been purely voluntary. What is the advantage of such arrangements?

4. What is hoarding and why is it an evil?

5. There are other cases in which the Nation and the local community take what they need for public purposes. Give examples and justify the procedure.

The Food Administration under Mr. Hoover has adopted the plan of organization described in the following statement:

The United States Food Administration being a purely temporary war organization, and dependent upon volunteer direction, has not considered it wise to set up any rigid form of departmentalization.

Mr. Hoover has called to his assistance men from all parts of the United States to assist him in carrying out the functions delegated to him as United States Food Administrator. The work to be undertaken is of a novel character, and the machinery employed in the administration of the older Government departments can not be used as a guide in determining the proper designation and division into definitely named departments; consequently, it has been decided to treat the entire question of the administration of the food-control bill as one of a series of problems. Mr. Hoover proposes to select from his associates one man to handle each problem as it comes up and this man in turn invites such other of the members of the Food Administration to join him as he may require. As these problems are solved, or from their character require a more less permanent staff, a permanent head is selected to devote his entire time to the subject, or commodity as it may be.

#### TRANSPORTATION SECTION.

Some examples will serve to show how this organization operates. At the head of the section dealing with transportation is an experienced railroad manager. It is his duty to see that food and other necessities are transported whenever necessary in such a way as to save food, serve the Nation's needs, and meet the demands of exportation.

A drought in Texas and southern New Mexico threatened to kill food cattle in those regions. The Food Administration put itself into communication with the Commission on Car Service and make a request for cars in the following statement:

The successful issue of the war rests in measure on the preservation of available foodstuffs. The alarming drought conditions in the southwestern territory, largely Texas and southern New Mexico, threaten the

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1. Review the reasons for a wheat shortage in Europe.
  2. What are the effects on other commodities when the price of wheat is high? Show how the effects are produced.
  3. Show the importance of the law regarding distilled liquors as a part of the prohibition movement.
  4. Why is fuel put into the same class with food? Discuss the matter from the point of view of human need for heat and from the point of view of productive industry.
  5. All executive action in the Government and in large corporations must be delegated. Discuss this necessity.

live-stock industry and in turn foodstuffs for ultimate consumption, since the demand for equipment to move starving cattle to feed is far beyond the ability of the carriers to meet serving that territory. The Food Administration is concerned regarding the conditions, and it appears necessary in the emergency to requisition and send to the relief of the cattlemen cars in abundance to save the cattle from starvation. It is understood, of course, this plan will work a temporary hardship on the shippers tributary to the lines now engaged in transporting cattle to the markets for slaughter. However, a serious condition confronts the industry and imperils the national interest, and as a war measure we recommend that cars be supplied preferentially in the drought-stricken region over cars in territory where cattle are being moved to market for slaughter and where there is an abundance of feed available.

The cars were produced and the cattle were taken where pasturage could be secured.

#### MEATLESS AND WHEATLESS DAYS.

Through the various sections of the Food Administration, especially the hotel and restaurant division and the division in charge of the pledge cards, the whole country has been urged to make Tuesday a meatless day and Thursday a wheatless day and to have one wheatless and one meatless meal each day. It is important that these two forms of economy be definitely located on designated days. The special day will keep the matter definitely in people's minds and will make it possible for dealers to adjust their supplies to a general practice. Whenever a group of people are to cooperate in a given enterprise, it is better that there should be a set way of doing it.

It is not possible to give details regarding the work of other divisions and sections. Some of these activities will be described in other lessons of this series.

There are sections in charge of sugar, of baking, of milling, of grain, and of labor. Another section deals with the purchases of our Allies, another with canned goods, others with perishable

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1. What would be the method of adjustment in ordinary times when a part of the country has a drought?
  2. Show how the war causes a shortage of cars and creates a need for special measures at the present time.
  3. What are the chief substitutes for wheat and meat?
  4. Crop gathering is a seasonal occupation. Why is the control of labor more difficult in such an occupation?
  5. What conditions would be likely to bring a system of rationing in this country?

goods, with oils, with milk, and so on through the long list of the Nation's food needs.

#### STATES ADMINISTRATION.

Especially important is the Division of States Administration. Through this division the food administrations which have been organized in each State are brought into cooperation with the central Food Administration at Washington. The President has appointed a Federal food administrator in each State whose duty it is to inform the people of his State and to keep the supplies of that section of the country at the service of the whole Nation.

This organization not only deals with food itself, but helps to bring labor to the points where it is needed in order to gather in the harvest. It is useless for farmers to plant grain and raise large crops if these can not be taken care of when they are ripe.

#### OUR METHODS DIFFER FROM EUROPEAN METHODS.

The methods adopted in all these activities are somewhat different from the methods employed in Europe for the control of food. There is no rationing or absolute food dictation in this country as there is in Germany. Price fixing and regulation of trade have gone forward much less drastically than abroad. This is partly due to the fact that food is more abundant here, and there is not the immediate danger which confronts the peoples of Europe. It is partly due to the fact that our country is much larger than the countries of Europe. The needs and the products of the different sections of our country are very different and a single method of dealing with our food problems would not work.

More important than any of the other reasons, however, is the fact that our Government has determined to carry on its food administration in such a way as to educate the people to understand the situation and to meet it through willing cooperation, as the people of a democracy should.

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LESSON A-14. SUBSTITUTE FOODS.<sup>1</sup>

We are asked this year as a patriotic duty to conserve certain foods which must be sent to our Allies in order that they may not starve. This contribution will be as great as any other service as we can render. To make it, it will be necessary for us to modify our food habits considerably, and we must effect the changes wisely so as to avoid any risk of endangering our own health and strength. We must have food which is sufficient in amount and of the right kind to satisfy all the requirements of the body. Our food must provide, first, the fuel that keeps up the heat of the body and gives power to work; second, the materials for the growth and repair of the bones, muscles, and other parts of the body; and, third, small amounts of substances which keep the body machine running smoothly. If we are to reduce our consumption of those products which are needed abroad, we must take care to replace them with others which serve the same purpose in our diet.

Our Allies are depending on us to send them wheat, meat, fats, and sugar. We must use less of these foods than we ever have used before in order that their needs may be met.

## WHEAT.

All this year's wheat crop in excess of what we ordinarily use was shipped to Europe before the first of December. Any additional wheat that is sent from this country must come from what we can save. This means that we must make every effort to reduce to the minimum our consumption of this cereal. Since wheat is a starchy food and serves in the diet chiefly as a source of fuel, we must use in place of it other foods of a similar nature, namely, corn, oats, barley, rye, rice, buckwheat, and potatoes, both Irish and sweet.

The crop of most of these foods is greater this year than the average for previous years. On the other hand, some of them can not be exported in such large amounts as usual because of the shortage of ships. In addition the cereals formerly used in the manufacture of distilled liquors are now available for food. There will be then a considerable supply of these products in excess of our normal consumption. This surplus can be substituted for wheat.

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<sup>1</sup> This lesson was prepared by Elizabeth W. Miller, instructor in Home Economics, University of Chicago, and assistant in the United States Food Administration. It aims to make clear the fact that the people of the United States are asked to substitute foods of less export value for those which are needed for shipment abroad. Intelligent substitution will help our Allies and will not result in undernutrition in this country.

We can reduce the amount of wheat used in a number of ways. Many of us have formed the habit of eating bread at every meal. This is not necessary, at least for those who have a reasonably varied diet. At dinner in place of bread more potatoes may be served. One small potato supplies about the same amount of energy as a large slice of bread. Other vegetables and fruits, when plentiful, may be used more freely as a source of energy. This practice saves wheat and utilizes perishable products as well.

At breakfast also it is possible to omit bread and serve instead more of the cereals, such as oatmeal, cornmeal mush, hominy grits, and steamed rice. Breakfast foods prepared from wheat should, of course, not be used. Variety may be obtained by adding a few raisins, figs, or dates to the cereal. This saves sugar as well as wheat, since the fruit sweetens the mush sufficiently to suit most people.

Wheat may also be conserved by substituting other things as far as possible for wheat flour in making bread, cakes, and pastries. There are two kinds of bread which we are accustomed to use, bread raised by means of yeast and the so-called quick bread. The latter variety is usually leavened with baking powder or soda and an acid. In making both kinds it is possible to use potato or meals and flours made from corn, oats, rye, barley, or buckwheat for part or all of the wheat flour.

In yeast bread not more than one-fifth to one-third of potato or other cereals can be substituted for wheat flour. This is because wheat flour alone contains the gluten necessary for making

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1. Give as many reasons as you can for the world shortage of food this year.
  2. Why has Germany been able to maintain her food supply in spite of the blockade?
  3. Explain why food conservation and reduction in the cost of living are not synonymous.
  4. Note the distinction between substituting foods and going without. Does the Food Administration ask us to go without food?
  5. Explain how cereals have been released by the legislation relating to the manufacture of alcoholic liquors.
  6. What is the chief value of fruit and vegetables in the diet?
  7. A large part of the effort of the Government has been devoted to the increase of production and the saving of waste. What steps have been taken in these two directions in your community?
  8. "Vegetables should be eaten near where they are raised, because they are hard to ship." Illustrate what this means.



a light, porous loaf. Gluten is the protein of wheat. It can be separated easily by making a stiff dough of ordinary flour and a little water and washing this ball of dough until all the starch is removed. There will be left an elastic mass that can be stretched without breaking. When flour, water, and yeast are mixed together and kept at about mean temperature, the yeast ferments, producing bubbles of carbon dioxide gas. The gluten in the flour stretches, retaining the gas, and the dough is gradually changed to a mass of thin-walled cells. When the bread is baked the gas expands and stretches the gluten still more. In this way a light, porous loaf is produced.

No other grain contains exactly the same kind of protein, although there is in rye a gluten somewhat similar to that in wheat. That is why yeast bread can be made entirely from rye flour. A lighter loaf is obtained, however, if some white flour also is used.

It is because of the exceptional quality of the gluten in wheat that it is so necessary to send that particular cereal to Europe. The people of France, England, and Italy depend very largely on baker's bread, which means yeast bread made from wheat, since other breads are too frail to be handled commercially. This is especially true in France, where bread comprises half the total food supply. The women of France are already doing double work—their own and that of the men who are serving as soldiers or

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1. How do cereals compare in cost with other foods as a source of energy? Compare the cost per pound of corn meal and of oatmeal purchased in bulk and in package. Compare also the price per pound of the various cereal preparations sold in packages.

2. Wheat is a staple because it is easy to preserve and to ship. What qualities of this grain make it more available for export than other grains?

3. What per cent of white flour is obtained from a given amount of the wheat grain? It has been urged that a higher extraction should be made. What are the objections to this?

4. Are hotels which serve graham or whole wheat breads on wheatless days interpreting the word "wheatless" correctly?

5. What are the differences in the composition of the various products that may be used as wheat substitutes? How do they compare with wheat?

6. Where did wheat come from originally?

7. What countries of the world produce the most wheat? Why are the crops unavailable for Europe now?

8. Describe the different kinds of bread that you have seen.



who are unable to work because of sickness or wounds. If these women are unable to buy bread, but are forced instead to spend even one extra hour each day in preparing other cereal foods to which they are unaccustomed, their burden may be more than they can carry.

The French are already conserving wheat by using a bread made of 80 per cent wheat flour and 20 per cent other cereals, such as rice, barley, oats, rye, and corn.

A great saving of wheat is possible in making quick breads. In these from 50 per cent to 100 per cent of flour or meal other than wheat can be used. They may be even more nutritious than bread made entirely from wheat, and the distinctive flavor of the different grains gives a pleasant variety. Corn was the chief breadstuff on which the Indians and the pioneers depended. If everyone in the United States used corn-meal breads to the extent that the people in the South are already doing from choice, enough wheat would be saved to meet the needs of our allies. Rye and barley have also served as bread cereals in different sections of the world. Those of us who have not been in the habit of using these foods must learn now.

#### MEATS.

The world's meat supply is being rapidly depleted. Our allies have not nearly enough for their needs. In England and France it has been necessary, because of lack of feed, to decrease the amount of live stock, saving only dairy cows. The Germans have seized almost 3,000,000 head of cattle belonging to the French and the Belgians. We ourselves produce less meat in proportion to our population each year. This is because of the decrease in land available for grazing and the resultant increase in the cost

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1. If corn can be substituted for wheat here, why not ship large quantities to Europe and let the people there do the substituting?
  2. Where did corn come from originally?
  3. What are some of the additional duties that war throws on women?
  4. The army gets better food in France than do civilians. Why?
  5. Give examples of the way in which habit enters into the determination of diet. How can these habits be changed in such times as these?
  6. Most of the grain raised in this country is used as food for animals rather than for men. Is the grain fed to animals wasted? Is it economical to kill the animals in order to save cereals for men?
  7. England has put much of her pasturage into cultivation. Should this be done?

of raising live stock. There is great need, then, for economy in the use of meat, especially beef, pork, mutton, veal, and lamb, which are most easily shipped.

Meat is valuable in our diet for two things—its flavor, which we like, and its protein, which is necessary to form muscles, blood, bones, and other parts of the body.

The flavor can be extended by combining it with cereals, potatoes, and other vegetables in stews, soups, and pies. A very little meat can thus be made to go a long way.

The protein that we need can easily be supplied wholly or in part by other foods. Fish, eggs, cheese, milk, dried peas and beans, and most nuts contain a large proportion of protein. The cereals also supply some, although they are primarily fuel foods. Three tablespoonfuls of cottage cheese, a 1½ inch cube of American cheese, two small eggs, and three-fourths of a pint of milk furnish, each, about the same amount of protein as a medium serving of meat (about 2 ounces).

In general, the proteins of vegetable origin, although much cheaper, are not of so good a quality as those of meat, fish, milk and eggs. But if they are supplemented with milk proteins, which are of exceptionally good quality, they may supply a large proportion of the protein in the diet.

Milk is a more important food than meat. It contains protein and fat, like meat, but it is much richer in mineral salts, especially lime, which helps to form bones, and in recently discovered substances which are now recognized as of great importance in nutrition. These last-named substances are present in foods only in minute amounts, and so little is known of their composition that

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1. Explain the decrease in the land available for grazing in this country. How does this increase the cost of raising live stock?
  2. Why is the production of rabbits for use as meat being encouraged?
  3. Which of the sources of protein mentioned in the text are easiest to ship?
  4. At current prices in your community compare the amount of protein that can be purchased for 25 cents in the form of milk, of meat, and of bread.
  5. The canning industry has done much to determine modern diet. What qualities of food make it easy and desirable to can?
  6. What modern methods of transportation have contributed most largely to the determination of our food habits?
  7. It is said that the diet of an American is much more varied than that of Europeans. Can you think of reasons why this is so?

it has not yet been possible to find a satisfactory name for them. They have been called "vitamines," "accessory substances," "growth determinants." There are at least two types.

#### MILK CHEAPER THAN MEAT.

Meat is a more expensive source of protein than milk, not only for the individual buyer who has to pay a high price per pound for it, but for the country at large. The animal is not an efficient machine for turning the protein in its food into meat protein. Only one-tenth to one-fifth of the protein in grain is recovered in the form of meat protein. Every time we eat a piece of meat it represents the consumption of 5 to 10 times that amount of grain by the animal. In the case of milk the return is several times greater. One-third to one-half the protein eaten by the animal is obtained as milk protein.

All these facts emphasize the importance of encouraging the production of milk. Children need it especially. Even at 15 cents a quart it is a relatively inexpensive source of valuable protein, lime salts, and "vitamines." In New York City the present high price of milk has reduced the amount used in some sections as much as 50 per cent. There has also been a recent increase in infant mortality which the health department ascribes to the decrease in the use of high-grade milk.

#### FATS.

Fats are concentrated fuel food and for this reason are important in the diet of soldiers who must take long marches. But they also

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1. In recent years the transportation of milk has become one of the great industries. Find out about the growth of this industry.
  2. What precautions are necessary to insure pure milk? How are these precautions taken?
  3. One of the most pathetic phases of the war has been the increased mortality of infants. Why should infants have a serious struggle for life in war times?
  4. In what ways can the skimmed milk and the buttermilk left from butter making be utilized?
  5. "Sour milk should never be wasted." Describe some of the ways in which it can be used economically.
  6. "Vegetable fats can be produced more economically than animal fats." Explain.
  7. In what way are fats used in the manufacture of ammunition?

have another value. It has been found in Europe, where the fat ration has been cut very low, that the reduction in fats interferes with the normal growth of children and with the healing of soldiers' wounds. Some of the animal fats contain minute quantities of substances which are necessary for the growth of new tissue or the repair of old. These substances belong to one of the two types of "growth determinants" or "vitamines" spoken of in connection with milk. The fats of milk and of egg yolk are particularly rich in these substances. A few other animal fats, such as suet, also contain them, but vegetable oils do not. Some of these "growth determinants" must be included in the diet. Therefore, unless milk is used freely, butter or oleomargarine made from beef fat should be served on the table. If milk is used, no further thought need be given to them.

#### ECONOMY IN FATS.

Other fats, especially the vegetable oils and hardened fats, should be substituted in cooking for two reasons. By reducing the output of butter, more whole milk will be made available for food. Vegetable fats can also be produced more economically than animal fats.

Some fat in the diet is not only necessary, but desirable, since it imparts a richness of flavor. We as a nation, however, are using and wasting about three and one-half times as much as we need. We can reduce our consumption by eating less pastry and rich cakes, by omitting fried foods, and by using all fats trimmed from meat or tried out in cooking. Soap also requires fat for its manufacture and should be carefully conserved.

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1. What is the reason for the objection which most people make to oleomargarine?

2. Is it right to use artificial coloring matter in making foods for the market?

3. When was cane sugar first known? From what was it obtained? What did people use for sweets before they could get sugar?

4. What is beet sugar?

5. What are the sugar-producing countries of Europe? Explain why our Allies have so little sugar.

6. Why is it impossible to make "sugary" candies out of molasses and other sirups?

7. Is sugar a food or a mere luxury?

## SUGAR.

Sugar is a readily available source of energy, but its chief value in the ordinary diet is probably as a flavor, for cereals and other foods can give energy equally well. British soldiers who met the gravest dangers without question are said to have rebelled when obliged to give up jam. Americans are in the habit of using about four times as much sugar as the people of France get at the present time. Without any great sacrifice we can do with much less. If all the people in the United States refrained from eating candy alone, the sugar saved would be sufficient to meet all the requirements of England under the present rationing standard.

We can satisfy our craving for sweets by using more sirups and fruits rich in sugar. Honey, molasses, maple and corn sirups, as well as dried fruits, such as dates, figs, and raisins, may take the place of sugar in sweetening cakes, puddings, and other deserts. No sugar is needed in bread. In the South and in New England some people are reviving an old custom by adding sirup, or "long sweetening," to tea and coffee in place of sugar, or "short sweetening." A number of candy manufacturers are making delicious confections in which little or no sugar is used.

By adopting such measures as have been suggested for reducing our own consumption of wheat, meat, fats, and sugar, we shall be able to send to our Allies and to our soldiers in France sufficient food to meet at least their most pressing needs.

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LESSON A-15. WOMAN AS THE FAMILY PURCHASER.<sup>1</sup>

In the business world purchasing is now recognized as a specialty which requires a high type of training. Importers of such finished goods as rugs and laces send abroad purchasing experts who can judge of the quality of goods and who know about prices in the foreign countries, where the goods are made, and in this country where the goods are to be sold. American manufacturers who import raw materials understand that successful buying is an important part of their business.

## PERSONAL PURCHASES USUALLY MADE WITHOUT EXPERT KNOWLEDGE.

While the business world knows the importance of purchasing, the ordinary person usually buys in a careless, or at least inexperienced way. He does not know about the quality of goods and he is ignorant even about his own financial ability to make the purchase. How much can one afford to pay for a pair of shoes or a hat or for the rent of a house? This is a problem in the allotment of one's income. The mere fact that one has the price of a pair of shoes in his pocket does not mean at all that he can afford to buy them. He ought perhaps to have an old pair mended because he really needs the money for house rent. Very few people prepare a budget of their expenses and carefully balance the budget against their income. The result is that many a family is in distress that might be comfortable if it would organize itself in a businesslike way.

The need of business organization in family and personal life arises from the very character of modern economic conditions. Once more we may refer to the fact, repeatedly pointed out in these lessons, that in times past the family made its own goods. Every member of the family was a producer. The amount of purchasing from outside sources was small and every buyer knew the quality of what he purchased, because the range of his buying was so narrow that he could be fairly expert.

## NEED OF SPECIAL TRAINING FOR FAMILY PURCHASERS.

To-day all is different. The family must buy nearly everything it uses. The members of the family need cloth, but they do not know about cloth making. They must buy vegetables, but they

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<sup>1</sup> This lesson was prepared by Hazel Kyrk, assistant professor of economics, Oberlin College. It explains why the appeal for economy in war time is addressed especially to women. It also indicates the effect which the changed methods of industry have brought about in the duties of women.



have never had experience in cultivating a garden. They must buy meats, but they have never had to do with live stock.

A new problem has arisen. It is the problem of training expert family buyers. This problem, like every social problem, begins to solve itself before it is clearly defined in the books on social science. With the changes in home life which have come with modern industry, the housewife has gradually taken on the duties of purchaser for the family.

#### PURCHASING THE DUTY OF THE HOUSEWIFE.

That the housewife is, in fact, the disburser of the income has long been recognized by those who offer for sale the articles which the modern family buys. The best advertising media are the magazines which women read. It is these women buyers who crowd the shopping districts and the department stores of cities. It is with women, mainly, that the grocer, the butcher, the milkman, the ice man, the laundryman, the vegetable and fruit vender, must deal. It is women who send orders to the large mail-order houses. All these facts bear witness to the purchasing activities of women, even if we had not the testimony from countless households that it is the custom for the father to earn the income and for the mother to spend it.

The same principle is recognized in these war times in the appeals which are made to the women of the country. If the Nation is to save wheat to send to our Allies, it is the women who

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1. Go to some store which deals in rugs and find out from the salesman some of the special facts which a purchaser of rugs would have to know in order to buy expertly for the trade.

2. Why is it advantageous for a buyer to go to the country where the goods are produced?

3. Make as long a list as you can of the raw materials which are purchased by American manufacturers in other countries.

4. Careful students of family life have prepared statements of the way in which an income should be divided among the different expenses of the family. What portion of the family income should be expended for rent?

5. Some classes of people, especially farmers, do not have their earnings in money as much as workers in the city do. Why is this so and what is the effect of this fact on the life of the family?

6. Point out some of the facts which must be known by anyone who wishes to make intelligent purchases for the family. In this connection find out some cases in which a family has secured inferior goods because it was not easy to decide whether the goods were of high quality or not.



must be enlisted. If we are to save fats, it is the women who must be educated to understand the need. The Food Administration has carried on extensive campaigns in the attempt to get the support of the women through pledge cards. The country is flooded with official and unofficial suggestions to women about substitutes for the things which have ordinarily been used. All this shows that the real dependence of the Nation for general economy is on the women who expend the family income.

#### FAMILY PURCHASING A MATTER OF NATIONAL IMPORTANCE.

There has never before been a period when we have been so fully aware as we are now of the national importance of the way in which each of us uses the goods of the Nation. Our own country and the world are facing shortages in food, in wool, in steel, and in fuel. If any individual or any family wastes any of these things, others will have to go without. Economy must be general. Purchase and use of goods are seen to be not merely a side issue, but a part of national life. Especially must we save energy and materials by dispensing as far as possible with all luxuries.

The nations of Europe have been forced to recognize the necessity of economical use of national resources more than we have up to this time. They are reduced to the point where the government has had to take direct charge of purchasing. One reads of bread cards and sugar cards and butter cards. All these mean

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1. Get one of the pledge cards of the Food Administration and explain why it makes the various requests that it does.

2. Find in the paper some of the suggestions which have been made about substituting food. Compare these suggestions with the statements made in the lesson immediately preceding this one.

3. In order to understand the national importance of some of the forms of waste that are mentioned in the paragraph, find out how many families there are in the United States and make some calculations to show the amount of waste which would result from small wastes in each family.

4. There are various kinds of waste. In some cases human energy is wasted. Get examples of this. In some cases material is wasted. Does this latter kind of waste involve any waste of human energy?

5. In ordinary times does our Government take any hand in setting prices of goods or in determining the quality of goods that may be sold in the market?

6. The Department of Agriculture has set up definite standards for such commodities as wheat and cotton. Show that standards can be set up in these cases more easily than for many other goods sold in the market.

that the individual has been rationed, and he is no longer free to make independent purchases. No more eloquent statement could be made of the national importance of the purchasing function.

#### LACK OF STANDARDS OF ECONOMY.

The main difficulty which confronts women in buying goods for the use of their families is the lack of definite standards to guide them. Is there any definite test to show whether a particular purchase has been a wise choice? When the business man buys he has profits to guide him and to test the wisdom or folly of his expenditure. But while a business or a shop is run for profit, a household is conducted for the comfort and convenience of its members. But "comfort," "convenience," and "well-being" are vague and indefinite tests to apply. Among all the possible ways of spending each dollar, how shall the housewife definitely determine which will best promote these general ends? Shall it be delicacies for the table, finer clothes for the children, more domestic service, a parlor rug, more frequent visits to the dentist, more books and magazines? Or, if it is a case of retrenchment, which of these or other items shall be eliminated or cut down?

#### SCIENTIFIC SELECTION OF DIET.

In only one department of family economy has scientific knowledge given much aid to the housewife—in buying food. Here there are some definite rules, based on known food values, to

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1. How do a business man's profits guide him in making his purchases?

2. Find out from your own home what is the distribution of the family income for some of the articles mentioned as comforts and conveniences. Then make up a statement of the way in which a person with an income of \$1,500 a year should divide his income in order to secure a certain number of these comforts and conveniences.

3. The Food Administration is urging the women of the country to buy the food commodities which are raised near home. Show how this practice will help in saving transportation and will also prevent the waste of many food substances.

4. Can you find examples of waste at grocery stores because people do not purchase wisely?

5. Why does the grocery store very commonly have a sale of perishable materials on Saturday night? What does this show with regard to the purchasing on the part of the storekeeper and of the community about the store?

guide the housewife in her expenditure. We know that the family diet must contain a certain amount of protein, a certain amount of fat, and so on, if the diet is to be wholesome. The preceding lesson gave some suggestion of the kind of knowledge we have and must use in this time of scarcity of food.

In almost all other lines practical experience is the only guide, and without definite tests as to what is rational the expenditure becomes largely a matter of imitation or emulation of others. It is astonishing how purchasers get into the habit of going to a certain store because it is the fashion. Or they buy a given brand of goods because it is widely advertised. There are, of course, in the long run very close relations between the success of a seller and the high quality of his goods, but there are, on the other hand, many false reasons for the temporary success of a certain dealer or a certain kind of commodity.

#### NECESSITY OF TRAINING.

What is needed to correct these difficulties is more training on the part of housewives. They need to be taught that along with the duties which they have always performed, cooking, cleaning, sewing, and caring for little children, they are called on by modern conditions to take on the new duty of intelligent purchasing. The responsibility of acting as disbursing agent for the household has come into prominence only during recent years, since the new type of industrial system has made the family dependent on purchase rather than on its ability to produce what it needs.

The fact is that the purchasing housewife needs much special training, because she is likely to be burdened by the relatively

- 
1. Advertisers take great pains to make the trade-mark on their goods familiar. Is this a legitimate way of getting business?
  2. What courses in the school curriculum would be helpful in preparing girls for purchasing? Is there any need for similar types of training for boys?
  3. The financial managing of a city is not unlike the financial managing of a family. Should there be courses in the schools which would prepare people who are to be in the common council to expend the city's money wisely?
  4. Find an example of some chemical test which would determine the quality of materials bought at the store and show why this chemical test can not be used by a small purchaser.
  5. How is material tested for its quality when purchased by large factories? Show that the method of testing thus employed is not available for the small purchaser.

small amount of her purchases. She must buy hundreds of things widely different in nature and purpose. How can she be an expert judge of all brands and varieties of different kinds of goods? The specialized buyers for large firms, buying perhaps only one commodity and that in large quantities, may acquaint themselves with the advantages and disadvantages of everything which would serve the purpose. They can determine quality by chemical or other tests of which the small-scale buyer for a household may not avail herself. The variety of the housewife's purchases also limits the extent to which she can canvass the market for the best quality or lowest price for each commodity. But it would seem that she has gone almost too far in insisting that everything be immediately accessible and has too frequently taken the easiest way, ordering over the telephone without any search for or inspection of the goods.

#### THE VARIETY OF HOUSEHOLD PURCHASES.

As a result of the scarcity of definite tests of expenditure and the difficulty of acquiring expert knowledge of the variety of goods which are bought, the housewife is often in a weak position in bargaining with the dealers who have the goods for sale. Co-operative testing has in part been resorted to. The Government is in reality developing cooperative testing when it passes a pure-food law and when it requires dealers to put a label on an article describing its exact quality.

The only general way of meeting the demands of the situation is to increase the intelligence of purchasers. The problem of budget making must be taken up. Training in judging qualities must become more common. Appreciation of the national duty of economy must be taught everywhere. Then there will be something like an intelligent use of the country's resources.

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## Chapter V.

### CUSTOMS, LAWS, AND FORMS OF GOVERNMENT.

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By describing the most elaborate and rigid system of social classification in the world, Lesson A-16 shows how society is controlled by custom as well as by law. The special function of law as a form of social control becomes clear only when law is considered in contrast with other devices for social control which are not connected with civil government.

Lesson A-17 deals with the origin of laws. One is apt to think of a law as the result of action, more or less spontaneous, in some legislative chamber. This is true only in part; the legislative act is but the final stage. The way was prepared in the life of the people long before the "bill" was introduced. In a democracy no law can live which is not based upon recognized need; and that recognition of need, in turn, is based upon experience of the people concerned, or else upon knowledge of the experience of others.

Lesson A-18 seeks to give an insight into the nature of government and the distribution of governmental functions. As individual laws develop from customs so the forms of government develop with the growth of a people. There are many examples in history of grafting the principles of one government upon the constitution of another, but after the lapse of years only those features persist which prove to be in harmony with the genius of the people. The constructions of the courts, the attitude of executive officers, and above all the trend of public sentiment in the end determine the force and meaning of written instruments far more than the legislators who frame them.

Lesson A-19 calls attention to some of the ways in which private citizens may take direct part in the affairs of government. The ballot is, to be sure, the final arbiter in a democracy, and intelligent voting is the highest duty of every citizen. There is much more in citizenship than suffrage, however. To aid public officers by active cooperation and to restrain them by honest criticism when the need arises are duties which democracy imposes on us all.

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#### LESSON A-16. CASTE IN INDIA.

By Mrs. L. E. LINZELL, Columbus, Ohio.

Every civilized community controls its members by means of formal rules or laws which have been enacted as means of promoting the welfare of the whole group. Sometimes these laws are very exacting, as when taxes are imposed on individual wealth or when service is required in the Army. Sometimes the laws deal with trivial affairs, as in city ordinances demanding that the snow be kept off the sidewalk or that smoke from a chimney be reduced by a careful firing of the furnace.

These formal rules and regulations of community life are supplemented by a great body of custom which is seldom thought of as a part of the community control. The fact is that custom was much earlier than law in controlling the community and is to-day in many cases quite as powerful.

## CUSTOMS EARLIER AND OFTEN MORE POWERFUL THAN LAWS.

Before taking up discussions of the laws and government in such a social system as ours, it may be well to get an example from the customs of another nation, which will make it clear that society sometimes controls the behavior of its members by means of rigorous social customs. Some one has said that primitive man is controlled by customs very much more completely than civilized man is controlled by laws. The penalty among primitive peoples for breach of custom is not infrequently the life of the offender, and the social tyranny of a ruling class as established in primitive customs is sometimes extreme. A very striking example of social customs which have crystallized into a most rigid system can be found in the castes of India.

## EXAMPLES OF THE OPERATION OF CASTE RULES.

An American boy from Ohio was one day walking through the narrow crowded streets of a city in India. He approached a little open shop where native sweets were being made and sold, and true to the boy's instinct he could not pass without purchasing. He soon made his selection of candy, but the indifferent shopkeeper, dressed only in a dirty loose cloth and bare above his waist, did not stir from his cushion, making it clear that he cared little for the boy's patronage. Instead of handing him the parcel, the vender placed it on the mud floor. As the young customer picked it up and offered the money to the shopkeeper, he was

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1. What is some of the most recent national legislation in regard to taxation?

2. The National Army recognizes the principle of universal draft of men between certain ages. What is meant under this law by exemption?

3. It is suggested in many quarters that a law be passed requiring universal military training after the war. How would such a law differ from the present one?

4. Before the present law was passed, the Army was recruited through voluntary enlistment. What motives prompted men to enlist under the volunteer system?

5. After war was declared the effort was made to bring social pressure to bear in order to increase the number of volunteers. What were the types of social pressure employed?

6. Discuss the difference between legal requirement and social pressure with reference to the effectiveness of each.



surprised to find that the shopkeeper quickly drew back in haughty disdain, indicating that the boy should leave the money on the floor where the parcel had been. The seller of sweets would have broken his caste and become polluted had he given the parcel into the hands of the Anglo-Saxon boy, for that boy was a foreigner, and the dealer must not have direct dealings with him.

A few days after that incident this same boy's mother was distressed to hear of the death by plague of the little daughter of the editor of the city newspaper. He was a refined, cultured Indian gentleman, a graduate of one of the great universities and a frequent visitor at the lady's home. Wishing to give comfort to the bereaved mother, the American lady asked if she might call at his home. He was much embarrassed, stating that his wife was very religious. However, after consultation with the family, an invitation to call was extended. The lady was admitted to a bare room with a mud floor; on the wall hung one or two crude pictures of Hindu deities. Presently a shy, but beautiful, young Indian woman entered with her sari drawn over her face, from which her sad brown eyes peered in wonder and embarrassment. This diffident, illiterate young Indian woman was the learned Hindu gentleman's wife. After a few minutes of difficult conversation, giving comfort as well as she could to her Indian sister, the American lady left. She had no sooner gone from the house than the purification process was begun, for the house had been defiled by her presence, and caste rules called for an immediate cleansing from the pollution incurred by the visit. The entire family must have a ceremonial bath, and the room in which the visitor had sat must be sprinkled with holy water.

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1. Enumerate some of the strong customs which operate in our social life but have no reenforcement in the law.
  2. Suppose that a man violates custom. What penalty will he suffer?
  3. Can you think of reasons why custom was more powerful in primitive societies than it is in our society?
  4. What is the effect of age on custom?
  5. What educational practices do you think of which have their roots in long-established custom?
  6. Suppose one wanted to break up long-established customs, how would he go about it?
  7. Where does fashion in dress originate?
  8. Can you mention fashions in dress that are unjustifiable in a time like this when certain materials are scarce?



## CASTE SYSTEM PECULIAR TO THE HINDUS.

This caste system of India is peculiar to the Hindus. It is not like the tribal clannishness of ancient times; nor is it at all similar to our modern mode of organizing society. The caste of Hindus is derived from birth alone, and the man of one caste can not be transferred to another, different castes being considered as distinct as different species of animals so that a man can not change from one to another any more than a cow can change to an elephant. Caste can not be gained as a reward of merit or bestowed as an honorary title by the most powerful monarch. It is this pride of birth which dates so far back in its origin compared with which the lineage of kings is but of yesterday that makes the people of India cling so tenaciously to this system and remain so rigid in its observance.

## MEANING AND ORIGIN OF CASTE.

The word "caste" is derived from the Portuguese word "casta" meaning race, and was used by them to designate the different classes of Hindus whom they found when they entered India in the fifteenth century.

According to the sacred books of the Hindus there were originally only four castes, concerning the origin of which there is this interesting myth. The Brahmans, or priestly caste, proceeded from the mouth of the great god Brahma; the Kshatrias, or warriors, from his arms; the Vaishyas, or farmers, sprang from his thighs, and the Sudras, or laborers, from his feet. This explanation is commonly accepted by the masses of Hindus.

Scholars trace the origin of caste to an ethnical basis. When the Aryans poured down through the passes of the Himalaya

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1. What effect is likely to issue from the fact that the governing class in a country like India is foreign to the soil?
  2. How did England get possession of India?
  3. What has been the English policy with regard to native customs?
  4. What customs of buying and selling do you know in which our storekeepers differ from those of other nations? Especially striking examples can be found by contrasting our practices with those of Oriental tradesmen.
  5. What is the status of women in a family in India?
  6. There are occidental religious ceremonials which in form are not unlike that which purified the Hindu family. What is the symbolism in these occidental practices?

Mountains from their ancient home in the highlands of central Asia and emigrated to the plains of India, they found inhabiting the land dark-colored aboriginal races, whom they quickly subjugated. These aborigines became their servants and formed the fourth caste, called Sudras; the three upper castes mentioned, the priests, warriors, and farmers, belonged to the conquering Aryans. These divisions were quite natural for the three primitive occupations of the Aryans were fighting, cultivating the soil, and worshipping the gods. This last occupation was considered the most important; hence the Brahmans or priests have always been held in highest reverence.

#### EXTENSION OF THE SYSTEM.

As the Aryans spread through the land and the requirements of life became more complex, innumerable divisions and subdivisions arose, and thus thousands of different castes were formed. The aborigines in time imitated their conquerors and their different classes became castes. However, some of these jungle peoples, those whose habits or occupations seemed defiling, such as leather workers and eaters of carrion, were reckoned as unclean, whose touch or even shadow was polluting. They became the unclean castes. Of these untouchables there are now nearly 60,000,000 and their numbers are rapidly increasing. Among them are now petty farmers, weavers, shoemakers, tanners, and sweepers—all organized on rigid caste lines. It must be remembered that through all this complex system there is a distinct line of demarcation between the clean and the unclean castes.

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1. Describe the Hebraic customs of purification, and contrast them with those of India.
  2. What is the doctrine of transmigration?
  3. What classifications of different grades of society are found in Greek history paralleling the classification of the peoples of India? What in Roman history?
  4. The statement that the classes sprang from Brahma is called a myth. What is a myth? What is its importance in enforcing a social custom?
  5. From what territory did the Aryans come?
  6. What language did they speak?
  7. What is their relation to our race?
  8. Are there modern instances of class distinction between races? Consider our attitude toward Indians, Orientals, and Mexicans, and the history of slavery in this country.

## CASTE AN ESSENTIAL PART OF THEIR RELIGION.

Caste is unlike any western social system in that it is an essential feature of the Hindu religion. The different peoples of India are designated by their religion; thus a Hindu is an adherent of the religion called Hinduism. It is often asserted that these people are the most religious in the world. What is really meant is that they are of all people the most bound by traditional ceremonial practices. These ancient ceremonies and regulations govern not so much their character and religious belief as their social and domestic life. Implicit conformity to these customs is the very essence of caste, and no man can be a Hindu who does not conform to caste requirements. A Hindu may be a believer in Buddhism, in Mohammedism, or even in Christianity; he may be a theist, polytheist, a pantheist, or an agnostic, but the requirements of caste may not be ignored if he is to be permitted to remain in the pale of Hinduism.

Hinduism teaches that a man's condition in this life is unalterably fixed by his conduct in previous existences. For example, the Brahmans argue that a child born in a sweeper's family suffers that degradation as a result of evil in former lives. Hence, for a low-caste person to aspire to improvement in his lot is contrary to the decree of the gods and is irreligious. On the other hand, the Brahman himself deserves his high birth because of a noble past.

## CASTE DOMINATES THE DOMESTIC LIFE.

The characteristic most conspicuous in an American home is its freedom. Not so in India; from the cradle to the burning ghat the Hindu's domestic life is regulated in minute detail by

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1. The lesson enumerates various types of religion. Find out something about the history of Buddhism and Mohammedanism.
  2. What is the territorial distribution of these religions?
  3. In this war mention has several times been made of the declaration of a Holy War. What does that mean?
  4. What have been some of the conspicuous cases of connection of religion with war in past history?
  5. The text mentions various forms of belief. Define each of the terms.
  6. What is the attitude in America toward class distinctions based on heredity?
  7. What is the attitude of European nations on this matter?
  8. What is the burning ghat?

caste rules. The morning bath, the anointing of the body, the cooking of the food, the manner of eating, the cleansing of utensils, the worship of the idols, and the style of clothing are all subject to its exacting regulations. The shape of a man's turban and the style of a woman's coiffure may designate their caste as surely as the marks applied on the forehead. Early marriage is insisted upon by many castes, and all marriage rites, ceremonies, and feasts are carefully guarded. Marriage must be strictly within caste bounds. Owing to contact with western civilization, in some parts of India many of the caste observances are being relaxed, but the marriage customs remain as rigid as ever. It is the last great stronghold of caste.

#### CASTE CONTROLS SOCIAL AND COMMUNITY LIFE.

In America society tends to divide itself along the lines of wealth and culture, but in Indian society there is no such consideration. There may be both rich and poor in the same caste; there may be both learned and ignorant, but these are bound together by a common birthright. They are as of one family, of the same interests and bound to help each other.

To some extent this fraternity of interests has alleviated the condition of the poor in the better castes. However, for the most part each caste thinks only of its own welfare, and it is utterly unmoved by the needs and sorrows which other communities may suffer. Owing to this heartless caste exclusiveness, the English language is hardly sufficient to describe the degradation of the 60 million outcasts or untouchables of India. None seem concerned about their uplift.

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1. Reference is made in the text to the distinctions in American society. Give examples of such division.
  2. Contrast them with the Indian castes in point (a) of permanence, (b) of importance to the individual, and (c) of importance to the social system.
  3. The American school is often referred to as the great means of democratizing our people. Show how the school does its work of breaking up class distinctions.
  4. The schools of Europe corresponding to our high schools charge tuition. What effect is that likely to have on the influence of those schools?
  5. Are there any tendencies in American life which cause a boy to follow the calling of his father? How strong are these tendencies?
  6. By way of contrast with the Indian castes, what is the basis of organization of our trade guilds?

According to Government rules a child of any caste may be admitted to the public school, but the higher-caste students and teachers frequently make it so uncomfortable for the lowly child that he is often forced to give up his chance for an education. Primary schools are provided in every large town and city for children of the untouchables, but no such provision is made for the intermediate and high school grades.

If this invidious distinction were confined to the school, it would be bad enough, but the truth is that the low-caste man finds himself handicapped at every step of the journey of life. The mail carrier will throw his letter on the ground; the high-caste judge will exclude him from the court room; the petty officials illegally exact forced labor from him; he must crowd to the side of the street as the high-caste man passes by. He can not get a drink of water from the public well; and when pestilence sweeps through his village he is left to die on the roadside, untouched by the high-caste passer-by. The Government does not sanction this persecution, but it is powerless to prevent it in the face of relentless caste.

#### INDUSTRIES INFLUENCED BY CASTE.

Caste commonly determines the trade of the individual. This is not invariably true, but is usually so, because nearly all the vocations of life are organized on caste lines. For example, there is a tailor caste, a goldsmith caste, a washwoman caste, a barber caste, a potter caste, and so on.

This organization of labor has through the centuries taken the place of trade guilds and labor unions and has done much to protect the interests of the various industries of India. On the other hand, it has done much to impede industrial progress.

Western ways are making some progress in the face of this rigid system, but only slowly. It is perhaps one of the most striking examples in the world of a rigid, persistent scheme of social control.

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LESSON A-17. AMERICAN MINING LAW.<sup>1</sup>

To trace a law to its remotest origins is an impossible task. The practices of a civilized community have gradually been developed from earliest times. When a community enacts a law, it is merely expressing in a formal way a principle which has long been in operation. This process usually goes on gradually and one loses sight of the fact that law originates in practical adjustment. There is one interesting historical example, however, of a system of laws now in operation in this country which was put together on so large a scale and at so exact a date that it exhibits very clearly the way in which laws originate. The so-called American mining law, which was enacted by Congress in 1866 and in 1872 in substantially the form which it has to-day, was derived directly from certain rules and practices set up in 1848 to 1851 by the people who went to California to mine gold. There was at that time no established system of laws which controlled the mining of the precious metals. The miners adopted rules which afterwards became laws with little or no modification. We may trace the development of these practices in the history of that period.

## CALIFORNIA COMES INTO THE UNITED STATES.

As a result of the War with Mexico the United States acquired an area embracing California, Nevada, Utah, and parts of Arizona, Colorado, and New Mexico. The treaty of Guadalupe Hidalgo, under which this vast extent of land was acquired, was concluded February 2, 1848, and proclaimed July 4, 1848. On January 18, 1848, and therefore just before the treaty was concluded, John W. Marshall discovered gold at Coloma, Cal., though for some little time he was not sure of that fact. At that time the Mexican laws relating to mining were in force, but after the treaty of Guadalupe Hidalgo was concluded Col. R. B. Mason, the United States military governor for that region, issued a proclamation on February 12, 1848, which declared that "from and after this date the Mexican laws and customs now prevailing in California relative to the denouncement of mines are hereby abolished." By the time, therefore, that the discovery of gold

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<sup>1</sup>This lesson was prepared by George P. Costigan, jr., professor of law, Northwestern University. It shows how laws are derived from customs. It deals with the one clear example of common law the creation of which falls within the period of American history.



was verified and the news of the discovery was spreading, the Mexican laws were at an end so far as the military governor's proclamation could effect that result, and there was no Federal law relative to gold and silver mining to take its place.

#### PROSPECTORS CLAIM THE RIGHT TO FREE MINING.

It was several months after the actual discovery of gold in California before the rush of prospectors and adventurers began. From the very first, however, those who came for gold insisted that they were entitled to take it regardless of whether the United States owned it and, after California became a State, regardless of whether the State of California or the United States owned the right to the minerals as sovereign successor of Mexico. Though they were technically trespassers upon the public domain, they insisted that they had a right to be there and to take the minerals found by them. In June and July, 1848, Col. Mason made a trip through the California gold fields and at that time, because he had not enough troops under him to do anything else, decided to yield perforce to the doctrine of free mining. On August 17, 1848, he reported upon his trip to the Adjutant General of the United States Army as follows:

The most moderate estimate I could obtain from men acquainted with the subject was that upward of 4,000 men were working in the gold district, of whom more than half were Indians, and that from \$30,000 to \$50,000 worth of gold, if not more, was daily obtained. The entire gold district, with very few exceptions of grants made some years ago by the American authorities, is on land belonging to the United States. It was a matter of serious reflection with me how I

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1. Give a number of examples of customs which are binding on members of the community, but have never been enacted into law.
  2. Show that there are certain customs in the school which control the members of the student body, but have never been enacted into law by the school authorities.
  3. In the matter of athletics show the distinction between common law and the rules adopted for games.
  4. How do the rules adopted in athletics arise?
  5. Get a description from some historical account of the way in which prospectors went to California in 1848.
  6. From this description discover what class of people went to California.
  7. What were the causes that led to the War with Mexico?
  8. Give a description of the progress of the Mexican War and of the grounds on which the settlement of that war was reached.



could secure to the Government certain rents or fees for the privilege of procuring this gold; but, upon considering the large extent of country, the character of the people engaged and the small scattered force at my command, I resolved not to interfere but permit all to work freely, unless broils and crimes should call for interference.

#### MINERS WERE ORDERLY AND LAW RESPECTING.

The 4,000 men working in the gold field in June and July, 1848, rapidly increased in number until there were several hundred thousand miners and others dependent on mining. Those who rushed into the gold field were not, as some people think, lawless adventurers, but in the main, law loving and law enforcing. Even when half were Indians, as was the case when Col. Mason made his trip to the field in June and July, 1848, they were law-abiding. In his report of that trip he stated:

I was surprised to learn that crime of any kind was very infrequent and that no thefts or robberies had been committed in the gold district. All live in tents, in brush houses, or in the open air, and men have frequently about their persons thousands of dollars' worth of the gold; and it was a matter of surprise that so peaceful and quiet a state of things should continue to exist. Conflicting claims to particular spots of ground may cause collisions, but they will be rare, as the extent of country is so great, and the gold so abundant, that for the present there is room and enough for all.

The ideal condition thus pictured did not last, however, and early the miners found it necessary, in the absence of Federal and later of Federal or State regulations, to provide rules for the location and retention of mining claims and even for the

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1. What is meant by the public domain and what is the extent of it at the present time?
  2. What are the conditions under which a citizen of the United States may acquire title to any part of the public domain?
  3. The Government frequently withdraws land, especially when it is rich in oil or mineral production. Why should this be done and how can the mineral resources be made available for public use after lands have been withdrawn?
  4. Would there be any way at the present time of accomplishing what Gov. Mason suggested in his report of 1848, namely, procuring rents or fees for the Government for the use of mineral lands?
  5. When did California become a State?
  6. Are the privileges of Indians under the United States law the same as those of other citizens?

punishment of crimes. They early adopted the very effective system of miners' regulations enacted at meetings of miners in self-constituted mining districts and early recognized and enforced through the district organization various customs which grew up in the districts. These regulations and these enforced customs, so far as they pertained to mining, were so reasonable and so fair to all as to call forth the highest praise from all who consider them.

#### OPINION OF UNITED STATES JUSTICE.

Of these miners' rules and regulations, and the relation which the act of Congress of 1866 bore to them, Mr. Justice Field, in his summing up of a case, said:

The discovery of gold in California was followed, as is well known, by an immense immigration into the State, which increased its population within three or four years from a few thousand to several hundred thousand. The lands in which the precious metals were found belonged to the United States and were unsurveyed and not opened by law to occupation and settlement. Little was known of them further than that they were situated in the Sierra Nevada Mountains. Into these mountains the immigrants, in vast numbers, penetrated, occupying the ravines, gulches, and canyons and probing the earth in all directions for the precious metals. Wherever they went they carried with them that love of order and system and of fair dealing which are the prominent characteristics of our people. In every district which they occupied they framed certain rules for their government by which the extent of ground they could severally hold for mining was designated and their right to such ground secured and enforced and contests between them either avoided or determined. These rules bore a marked similarity,

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1. The statement quoted from Justice Field in the text is included in a summary of a court decision. In general, what is the form of court decisions rendered by the courts of the United States?

2. Can you quote any other decisions that have become of great historical importance?

3. Where does one find these decisions recorded?

4. What use do lawyers make of the summaries of court decisions in presenting their own cases?

5. In the statement by Justice Field a number of different types of mining are referred to. Find out what these different kinds of mining are.

6. How is title secured to land in regions that have long been populated and surveyed?

7. In a town or city what are the landmarks that can be safely followed in surveying for title to land?

varying in the several districts only according to the extent and character of the mines; distinct provisions being made for different kinds of mining, such as placer mining, quartz mining, and mining in drifts or tunnels. They all recognized discovery, followed by appropriation, as the foundation of the possessor's title, and development by working, as the condition of its retention, and they were so framed as to secure to all comers, within practicable limits, absolute equality of right and privilege in working the mines. Nothing but such equality would have been tolerated by the miners, who were emphatically the lawmakers as respects mining upon the public lands in the State. The first appropriator was everywhere held to have, within certain well-defined limits, a better right than others to the claims taken up, and in all controversies, except as against the Government, he was regarded as the original owner from whom title was to be traced.

#### EXAMPLES OF MINERS' LAWS.

The rules adopted by the miners in the various camps were frequently drawn up with great care and show a large intelligence on the part of the people who prepared them. Some examples may be borrowed from the rules of the Jacksonville camp in Tuolumne County, Cal. Without attempting to reproduce all of the articles of these laws, the following may be quoted:

ART. V. In the administration of law, both civil and criminal, the rule of practice shall conform as near as possible to that of the United States, but the forms and customs of no particular State shall be required or adopted.

ART. VI. Each individual locating a lot for the purpose of mining shall be entitled to 12 feet of ground in width, running back to the hill or mountain and forward to the center of the river or creek or across a

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1. What is the practice in ordinary courts with regard to decisions rendered in another State?

2. Can you see reasons why the miners would definitely prescribe that no particular State law should be followed in their own decisions?

3. Why do the miners' rules give such close attention to the matter of streams and their relation to claims?

4. The principle that land must be worked in order to be held has been carried over into Federal legislation with regard to claims taken up in the public domain. Defend the principle that underlies this requirement.

5. Why should a man be prohibited from holding several claims at the same time?

6. With regard to the use of water in streams and the deflection of the course of a stream, what is the present general law of the country?

7. What is the purpose of the article which relates to arrivals from a foreign country?

gulch or ravine (except in cases hereinafter provided for), lots commencing in all cases at low-water mark and running at right angles with the stream where they are located.

ART. VII. In cases where lots are located according to Article VI, and the parties holding them are prevented by the water from working the same, they may be represented by a pick, shovel, or bar until in a condition to be worked; but should the tool or tools aforesaid be stolen or removed, it shall not dispossess those who located it, provided he or they can prove that they were left as required; and said location shall not remain unworked longer than one week if in condition to be worked; otherwise it shall be considered as abandoned by those who located it (except in cases of sickness).

ART. VIII. No man or party of men shall be permitted to hold two locations in a condition to be worked at the same time.

ART. IX. No party shall be permitted to throw dirt, stones, or other obstructions upon located ground adjoining them.

ART. X. Should a company of men desire to turn the course of a river or stream for the purpose of mining, they may do so (provided it does not interfere with those working below) and hold and work all the ground so drained; but lots located within said ground shall be permitted to be worked by their owners so far as they could have been worked without the turning of the river or stream; and this shall not be construed to affect the rights and privileges guaranteed or prevent the redress by suit at law.

ART. XI. No person coming direct from a foreign country shall be permitted to locate or work any lot within the jurisdiction of this encampment.

The other articles relate to the appointment of proper officials to carry out these laws and to the punishment of criminal offenses against which the community had to protect itself.

1. The tin mines in southern England were known in very ancient times. Find out something about the early history of these mines.

2. The common law developed in these early English mines was doubtless carried over to California by men who had had experience in the English mines. Is it likely that these English miners knew in detail the English law or is it more probable that they carried the English law to California in the form of customs?

3. From what source is it probable that the Mexican laws were derived?

4. What other organizations in America are based on the assumption described in the text that the common people have a right to legislate for themselves?

5. What assumption underlies the organization of most of the European Governments with respect to the right of people to legislate for themselves?

6. What other analogous cases can you give of rights that are acquired through discovery?

## SOURCES OF MINERS' LAWS.

The sources of these rules have been discussed by historians of the law. It has been suggested that many of the prospectors came from other countries where they had experience with the common law of these other countries. Some of the principles which we find incorporated in the rules can be traced with a good deal of directness to the laws of Mexico. Some of the principles seem to go back to the tin mines of Devon and Cornwall. Whatever the sources of the general principles, the great virtue of the system appears in the fact that these miners saw the necessity of regulating their ownership in land and adopted and enforced the best principles that they could devise. One writer on legal history has pointed out the significance of these laws and their enforcement in the following terms:

At first they constituted all the law there was upon the subject, and we have here a modern instance of an original congregation of the people creating the law required by their necessities upon the assumption that the right to legislate was inherent in the people themselves. They proceeded upon the theory that the public domain belonged to the people; that the mineral therein was the subject of free, private acquisition as a reward for discovery and occupation; and thus defied in effect the settled tradition and laws of other countries and the right of the United States as a Government to the mineral contained in its lands.

## PRINCIPLES OF MINERS' LAWS.

Later experience showed the necessity of a modification of the principles laid down by the miners with regard to the right to follow a vein of metal underground from the point of its discovery to areas not covered by the original claim. In other

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1. If a law does not represent the highest type of justice in a given situation, what is likely to be the history of its enforcement?
  2. What is meant by repealing an earlier law and what are some of the motives that would lead to the repeal of a law?
  3. Can a court decision modify the law? If so, in what direction can this modification be made by the court?
  4. Is it right for a group of citizens to modify a law because they do not believe that it is just?
  5. Does the city government or State government ever relax the enforcement of a law which is no longer applicable to a given situation?
  6. Under what conditions is martial law declared in a given community?
  7. What are the characteristics of martial law as distinguished from ordinary law?

respects the principles of the present law were the principles of the miners' practices. Five such general principles can be stated as follows: First, there shall be free mining, that is, those entitled to mine on the public domain shall do so without having to pay anything to the United States for the privilege, though they may purchase from the United States, if they so desire, the land mined and its mineral content. Second, priority of discovery gives priority of right if it is followed within the required time by acts evidencing an intention in good faith to utilize the ground for mining. Third, the ground intended to be claimed must be no larger than a specified extent and must be so marked as to notify subsequent prospectors just what ground is claimed and, in general, a notice describing the ground and its selection for mining purposes must be recorded for the benefit of such subsequent prospectors. Fourth, the ground can be retained for mining or against others seeking to acquire possession of it only if a certain amount of work is done annually. Fifth, if the annual labor is not done, or if the ground is abandoned by the prior prospector, the ground may be located by others.

#### THE METHODS OF A PURE DEMOCRACY.

The history of American mining laws gives a very vivid account of the way in which law in general is developed. As one writer has put the matter:

This adventurous class of our people met, as their kinsmen and ancestors have always met, every emergency, with good sense, promptitude, and fairness, and from their actions resulted a set of usages and regulations known as the Miners' Common Law, or the Miners' Law of Right, which were inspired by such a keen sense of practical justice that they are found, upon analysis, to contain the best elements of the most carefully formed mining codes of the older world, and the best elements of the code finally enacted by Federal legislation.

The reason why these rules and regulations were so successful is found in the fact thus stated by the same writer: "The government of the miners was in form a pure democracy, in which all were voters, lawmakers, and triers of causes by right."

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LESSON A-18. LOCAL AND NATIONAL GOVERNMENTS.<sup>1</sup>

Perhaps one of the simplest ways of coming to an understanding of the nature of government is to study briefly how our National Government differs from the governments of our States, and how these in turn differ from the governments of towns and cities. Every American is subject at the same time to both the State and National laws. If he lives in a city he is subject to a third set of laws commonly known as city ordinances. There is at times an apparent overlapping and even a conflict between these three systems of government. But at bottom there can be no serious conflict between them, and each has its part in promoting the life of the community and the individual.

If one goes into the details of the matter, one finds for example that the United States Government pays no attention to an ordinary murder case. The local community and the State provide protection for citizens. However, the United States Government will take charge of a community if murder causes a riot which interferes with the carrying of the United States mail.

## ORIGIN OF THE NATIONAL GOVERNMENT OF THE UNITED STATES.

If we study the history of the United States, we find how this distribution of government functions originated.

The various colonies, which were the original communities in the United States, got their power to govern individuals and to define property rights from the charters granted to them by English sovereigns and by other European authorities. Each of the American colonies had certain laws which had been made by the governors and their councils.

When representatives of the colonies came together after the Revolution for the purpose of organizing themselves into a nation, the question uppermost in their minds was that of adjusting the rights of the various colonies and their different systems of laws to the needs of the young nation about to be organized. The colonies were so jealous of each other in the early days of their independence that they were unwilling to consolidate into a closely united government. They tried at first to get on as a loose federation of States, each State retaining a large measure of

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<sup>1</sup> This lesson is not an attempt to describe any one of the governments of our country in detail. The teacher and the student should look up the description of the various forms of government in some book on civics. This lesson aims rather to give a general insight into the sources and the limitations of authority both on the part of governments as wholes and on the part of particular officers.



independence. They thought of this federation as a kind of succession of agreements. Each State was to be represented in the national council and was to do what it could for the Nation as a whole, but its agreement was to be secured in every case before the Nation imposed upon it any obligation.

A very few years of experience made it clear that there would have to be a strong central government or the union of States would break up through disagreements. Such a government was created by the adoption of a constitution. The Constitution is a written statement of the rights which shall belong to the National or Federal Government. The various States through their representatives conceded, for example, that no State should be allowed to go to war on its own initiative. War is so vital a matter to the life of a nation that action in regard to it must be harmonious throughout the country. Consequently, the war-making powers were vested in the central national authority.

#### THE STATES AS THE ORIGINAL SOURCE OF CONTROL.

Many other examples could be cited, all of them illustrating the fact that the States gave over to the Central Government powers which originally belonged to them. They surrendered only those powers which they regarded as too broad for safe administration by the single State. The United States Government as constituted to-day gets its authority from the Constitution. It can deal with matters only in so far as the Constitution gives it jurisdiction over these matters. If there is any interest which is

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1. How many States are there in the United States and how many Territories?
  2. How does the government of a Territory differ from that of a State?
  3. What were the original States of the Union?
  4. What was the method by which the later States came into the Union?
  5. What was the difference between the system of laws in the different colonies? Compare, for example, Virginia with Massachusetts as examples of such a difference.
  6. What evidences can you find in the histories that the colonies did not agree during the Revolutionary War in regard to all the policies adopted for the National Army?
  7. What national assemblies preceded the assembly that adopted the Constitution?
  8. When did the constitutional convention meet and who were some of its most important members?

not referred to in the Constitution, that interest remains under the control and jurisdiction of the States, and the laws relating to these interests must be enacted by the States.

Education is one of the large interests which the States did not give over to the National Government. The educational ideals of the northern and southern colonies were so different from each other and so closely related to the religious interest of the people that it did not seem wise for the Federal Government to be charged with the responsibility of conducting schools. Our Nation differs from all other nations in its local control of the school system. European nations have a minister of education and have a school system which is in greater or less measure supervised in its course of study and in its general regulations by the Central Government. The United States, on the other hand, has no national control of education.

This example, together with the earlier illustration in which it was pointed out that the State has full responsibility for the protection of individual life, makes clear what is meant by the general statement that the National Government of the United States draws its powers to make laws from a Constitution agreed to by the separate States which were the original governing bodies.

#### MUNICIPAL CONTROL.

Turning from the relation of the State to the Federal Government, we may comment briefly on the relation between the State and a city government. Here again the State is the original source of power and right. A city gets its rights from a charter which is granted to it by the State legislature. When

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1. The Constitution of the United States is described as a written constitution. How does this differ from the unwritten constitution of England?
  2. How can the Constitution of the United States be amended?
  3. What amendments to the Constitution of the United States are now under active consideration?
  4. Mention some other matters over which the Federal Government has exclusive control besides matters of war, which are mentioned in the text.
  5. Mention a number of public matters over which the Federal Government assumes no control whatsoever.
  6. What were the differences between the religious and the educational views of the northern and the southern colonies?
  7. What is the attitude of the Government of the United States on religious matters?

people have grown numerous enough in a given region to need a more compact control than that provided by a village organization, they apply to the legislature for the right to organize a city. The legislature does for the city what the Constitution did for the United States. It defines the way in which the city shall govern itself and the subjects on which the city may pass laws and regulations. For example, city charters always provide that the city may organize a police force to be responsible for order on the street and in public meetings. Charters provide that the city may take steps to provide water and light and transportation for its citizens. These are called public utilities. The control of municipal utility systems, when once granted by the city charter to the city government, passes out of the hands of the State, except in such general respects as are reserved to the State by the charter, or until the State chooses to resume control. The charter of a city usually does not allow the city to tax itself indefinitely for its public utilities. It is important that a limit should be set on the amount of money which can be raised by a city for its utilities, because the State must draw from the inhabitants of that city a tax for the support of the State. The State therefore protects itself by putting a limit on the amount which a city may collect in taxes and may spend in meeting local needs.

#### LIMITED SYSTEMS OF GOVERNMENTAL CONTROL.

The United States Government on the one hand and the city on the other hand are limited forms of government. One can exercise functions only within the limits of the Constitution,

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1. What is the ordinary form of city government?
  2. In recent times the effort has been made to simplify city government by the adoption of so-called commission forms of government. What are these more recent forms?
  3. What officers of the county correspond to the police officers of the city?
  4. What authority does the county or township have in governing a community? From what sources does it derive these powers?
  5. What advantages to the community can you see in delegating the control of local public utilities to the citizens who make use of these utilities?
  6. Does the Federal Government ever take charge of any department of the city government; for example, the health department or the policing of any part of the city?

and the other within the limits of the charter granted by the State legislature. The State is much broader in its powers. It was the original source of governing power, and as such is responsible in a broad way for the control of all of the activities of its citizens not explicitly surrendered to the National Government or to the chartered municipalities, and the latter may be resumed at any time unless forbidden by the State constitution.

#### DISTRIBUTION OF POWERS.

Within each of the types of government thus outlined there is again a distribution of powers which became necessary the moment the community began to enact and enforce laws. If one goes back in his thinking to the period when government was of the military and autocratic type, one realizes that the power of the king included both the power of making laws and the power of executing them. Indeed, the king usually exercised the third power which we recognize in the government, namely, that of passing judgment in cases. The king was lawmaker, judge, and executor. As communities have grown, people have insisted that there be a distribution of powers so that no one can exercise unlimited authority over the community.

#### LEGISLATIVE, EXECUTIVE, AND JUDICIAL POWERS.

The mode of government which has come to prevail throughout the United States is one which divides the powers of government into three classes. These are legislative, executive, and judicial. In the United States Congress with its two Houses passes laws. The President and the officers who are responsible

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1. Mention some changes in industrial practice which call for new types of legislation on the part of the State.

2. Who can initiate the enactment of a new law in the State? in the city? in the Nation?

3. Can any interested citizen influence legislation directly? Describe the methods by which any influence that he has may be exerted.

4. What types of government exist in the world that are entirely different from our own?

5. Describe a number of phases of government activity which belong to the lawmaking branch; to the executive branch; to the courts.

6. Show that the division of functions in the Government is not absolute, in other words, that there is an overlapping, so that the same public officer sometimes acts in one capacity, sometimes in another.

directly to him see to it that these laws are made effective. If any question arises with regard to the interpretation of the law or the validity of the acts of the Executive, these are submitted to a tribunal of judges created for the purpose of listening to cases and deciding on them.

The form of government in the States is similar to this general form of government adopted for the Nation. The governor and lieutenant governor in a State stand somewhat in the same relation to the State government as does the President to the National Government. There are State courts which can pass on matters that fall within the scope of the State laws, and there is also a legislative body which represents the people in enacting laws.

In a city a similar type of government usually appears. There is a mayor who has executive powers and appoints the officers who execute the laws. There is a council which passes ordinances or city laws within the limits of the city charter, and there are certain municipal courts with jurisdiction over small suits and minor infractions of law.

#### PARTY ORGANIZATIONS.

The machinery of our Government which has been sketched up to this point does not include one important element, namely, the political parties into which voters are organized. These political parties are voluntary organizations of citizens designed to express certain fundamental differences of view with regard to the kinds of laws which should be adopted and the ways in which the Government should be administered. They constitute the means of carrying on public debate. Each political party espouses a certain political principle or group of principles and devotes itself to making converts in order that the Government may, by its choice of officers, adopt the principles advocated by that party and enact them into laws.

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1. How are the officers of the different branches of the Federal Government chosen? Show especially the difference between the creation of a Federal court and the choice of members of the lawmaking body.

2. Following the matter referred to in the last question somewhat further, can you show why it is desirable that the judges of the United States should be chosen differently from the lawmakers?

3. With regard to the term of office of the different types of officers, what are the differences and what are the reasons for these differences?

4. The statement is frequently made that the Executive in our National Government has in recent years enormously increased in power. Can you see reasons why this should be so?

The influence of parties on the whole is useful both in educating public opinion and in keeping a restraining pressure on the party which is in power at any given time. But the influence of parties sometimes works harm. One glaring example of this appears in the fact that very often parties do not distinguish between national and local issues. The great political parties are formed on the basis of issues that relate chiefly to the National Government. Perhaps the best known example of this fact is the long controversy between the Republican and Democratic parties on the matter of the tariff. The question whether goods brought into this country from other countries shall be heavily taxed as a means of deriving revenue for the conduct of the Government has been discussed with such vigor and for so many years that the terms Republican and Democrat mean to most people attitudes on the matter of the tariff.

The lines of party division which are clearly marked on this national issue are very commonly carried over into State and municipal elections which have nothing whatsoever to do with the tariff. When a city council has to be elected, the issues that are involved may be only those which relate to public utilities in the city and to proper housing and sanitation. There is no reason for a division of votes on these municipal questions along lines determined by debates on the national problem of the tariff. Yet the distinctions between national and municipal government, which are clear enough when we study the history of these governments, are lost to view, and voters hold to their party affiliations and as a result very frequently are led by their affiliations to vote quite unintelligently on municipal matters.

Another danger is that party organization will become corrupt because it is somewhat informal. The Government is checked by

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1. What is a party platform and what is a party convention?
  2. What are the leading principles advocated by the Democratic and Republican parties?
  3. The party system is said to furnish a very wholesome check upon those who are in power at any given time. Show how this is so.
  4. Enumerate some of the issues which ought to be of leading importance in a city election, but are wholly outside of the interests of the national parties.
  5. Political bosses sometimes get control of party organization. How does this come about and what is the importance of such an influence for our democratic government?
  6. What are some of the methods that are employed in promoting general intelligence with regard to political matters?



constant publicity in its action and by the fact that anyone suffering a wrong can take it to the courts. Party organizations are much less accessible to the correcting influences of publicity and review of their acts. The evils which have grown up through party organization have in recent years been corrected in some measure by legislation which has defined more fully the place of parties in public life and the methods by which they may operate.

#### RESPONSIBILITY FOR INTELLIGENCE IN A DEMOCRACY.

Enough has been said to make it clear that government and laws are matters which grow up through the efforts of the community to set up a social organization that shall protect rights and distribute responsibilities. Laws and the forms of government are the devices adopted by the community to regulate social relations at those points where experience has shown that the greatest dangers to community harmony lie.

In a country where the government is constantly referring its problems back to the citizens for decision by popular vote, it is especially important that everyone make himself intelligent with regard to the character of the organization of the government and also with regard to the issues which are being dealt with in the laws that are enacted. Especially is it important that every citizen understand that government and laws are only part of the community life. The broader principles of justice and order which lie back of the government should be kept constantly in mind as the principles which must be more and more fully realized as governmental control expands and laws express more fully the best methods of dealing with community problems.

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LESSON A-19. ACTIVE CITIZENSHIP.<sup>1</sup>

The remark is often made that "any city has as good a government as it deserves." It is one of those sayings that are both true and false. If it is taken to mean that our city governments have not always met the highest moral standards which we could set up and have not fully conformed to the highest standards of order, justice, and cooperation, then the remark is undoubtedly true. But if it is taken, as it too often is, to mean that the government of our cities is on the same level as the intelligence and good will of their people and that with people like ours no better government can be expected, then it is very surely untrue.

The fact is that government is only a partial expression of our community ideals. It is a mistake to suppress the ideals and to be satisfied with what is now at hand in the way of government organization. It is no less a mistake to forget that government has grown out of these ideals and can be made better by their further application.

There may be said to be two main notions of the way to proceed in the handling of public business. One of them holds that the complicated business of government must be kept in the hands of men trained and competent to manage it; that the great mass of the public can not be intelligent upon such matters, and that for them to try to be is to invite confusion and to hamper the efficiency of the competent officials; that the business of the general public is to accept and respect the judgment of those properly in authority, and not to endanger the success of public administration by attempting to control it. It holds that wisdom in such affairs must necessarily come from above and not from below. This is, in general, the bureaucratic view and is exemplified in such governments as that of Prussia.

## THE DEMOCRATIC VIEW.

The other theory holds that however true this may be in details and at a particular moment, in the long run wisdom must come from below and that it is our chief business to keep the sources of such popular contributions to government fresh and strong. It believes that the only way to make our governments steadily wiser

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<sup>1</sup> This lesson was prepared by Frederick D. Bramhall, instructor in political science, University of Chicago. It shows that the duties of citizenship extend far beyond the requirement of obeying the law or voting at stated intervals. The citizen who would do his whole duty must inform himself with regard to public issues and must see to it that public officials are wisely selected and actively supported.

and juster is to have as many as possible of the people whom they serve share actively in their management. It maintains that public officials will in the long run advance most surely in wisdom and success by having as large a portion of citizens as possible constantly watching, criticizing, and influencing them; and that the intelligence of the mass of people, the only source of future wisdom, can be stimulated and broadened in no other way. This is, in general, the democratic theory and is the one which it is our purpose through this war to establish for the whole world.

In this country we have definitely adopted the democratic view. That we have not always applied it successfully needs scarcely be said. In keeping our governments close to the people we have so often allowed them to become incompetent and bungling that some have expressed the fear that incompetence is the necessary price of popularity.

#### THE DEMAND FOR EFFICIENCY.

In our grandfathers' day there was not much worrying about governmental incompetence because there was not very much that government was called on to do. To be let alone was what Americans wanted. To-day, on the contrary, and especially in the cities, there are thousands of things which we want our public servants to do. It begins to be a matter literally of life or death whether these things are well done, badly done, or neglected. More than ever before we are turning anxious eyes on the work of government and asking why it is not possible to combine to a greater degree true popularity in the guidance of public action and competent, honest workmanship in execution. And when one looks about at the real accomplishments of the past 20 years there is no reason for being despondent over the outlook.

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1. What are some of the ways in which community ideals express themselves other than through government?

2. Contrast the ideals of a government such as that of Germany with our own ideals.

3. Give some of the reasons why government falls below the best ideals of the government.

4. The new Government of Russia is extreme in its efforts to follow the wishes of the common people. Is it safe in all cases to accept the judgment of the majority?

5. Is our Government a pure democracy?

6. Would an army organized as a pure democracy be a successful organization?

## WIDER PARTICIPATION IN GOVERNMENT.

Of all the encouraging signs of the present day, perhaps the chief one is the great extent and growing scope of public activities of citizens in adding to the effectiveness of higher ideals in governmental organization. It is the purpose of this lesson to call attention to the many ways in which private citizens are to-day making themselves part of the public intelligence of our cities. Through one or another of them, millions of our city dwellers are contributing to the better world of to-morrow, and getting in return what is one of the chief pleasures of life, the sense of a grip on big and significant forces and a share in generous issues.

Let us pass by the formal and official responsibility of voting, stopping only to notice that we persist in the experiment of universal suffrage largely because we believe that to give men the right to vote is an indispensable means of making them see that they are a part of the common wisdom, and that we are now extending the vote to women for exactly the same reason. We shall pass by also such official responsibilities as service on juries, as witnesses, and the like, in order to come immediately to the voluntary organizations by means of which the individual citizen adds to his lone strength the forces of others pushing in the same direction.

## POLITICAL PARTIES AND NATIONAL ISSUES.

It is a subject of frequent comment that city government is seriously affected in this country by the fact that the political parties which furnish the chief means of political discussion are organized along the lines of national issues. Once the party lines are laid down, the individual finds it very difficult to ignore them if he wishes to make his vote count.

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1. How much time should a citizen devote to the duties of citizenship?
  2. What is the difference between the franchise in this country and some of the other countries of the world?
  3. Why does the text speak of universal suffrage as an experiment?
  4. Whose duty is it to serve on a jury?
  5. How is a jury chosen?
  6. What is the theory back of a trial by jury?
  7. What kinds of cases are tried before juries?
  8. What are some of the city problems that are entirely independent of national issues?
  9. How do citizens go about organizing an independent party?

Men and women who are anxious to serve the city in which they live and to improve its government find it necessary at times to abandon altogether the affiliations with party which they find advantageous when they express themselves on national issues.

The problem of improving a city becomes in many cases the problem of devising some means of freeing the city from the hold of a party organization which is altogether foreign to city problems and often negligent of the city's best interests. The question is one of getting a means of influencing city government in the right direction in spite of the dead-weight of a national party organization.

#### THE ORGANIZATION OF MUNICIPAL PARTIES.

People have tried three ways of making themselves count in city elections without tying themselves to a national party. First, they have organized independent city parties and nominated candidates to stand on a city platform. Some attempts have unquestionably done much good, both when they have been successful and when they have failed, in getting people to think straight on local matters. But it is always a desperate chance to defeat the organized and skillfully managed regular party machines. If through enthusiasm and good leadership those who would emphasize city issues, have won, they have, hitherto, at least, without the cohesive power of patronage and spoils belonging to the regular parties, been unable to hold together for any great length of time and have soon lost to their better disciplined adversaries.

#### FUSION MOVEMENTS.

Second, people have tried forming separate organizations, "good government leagues" and "citizen's unions," and offering to

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1. Wherein does an established political party have its strength?
  2. What is meant by patronage and spoils?
  3. Are these legitimate assets of a victorious political party?
  4. The adoption of civil-service laws and rules of appointment is aimed at the patronage and spoils system. What is civil service?
  5. What is a primary election?
  6. The primary is intended to break up illegitimate control of political parties. Show how.
  7. The nomination of candidates for office is an important step in any election. How are these nominations made?
  8. What were the deciding factors in the last election in New York City?

combine or fuse with either regular party which will come nearest to satisfying their demands. The offices are then divided between the two. If they control enough members to turn the election, such associations may be very powerful and have achieved large results. Notable instances are various fusion movements in New York City. They suffer, however, from the necessity of compromising with unsavory companions for the sake of support.

#### NONPARTISAN ASSOCIATIONS FOR INFORMING VOTERS.

Third, they have formed nonpartisan associations to study candidates nominated by the regular parties, publish their records and qualifications, and recommend to voters the support of the best. Most successful of this sort has been the Municipal Voters' League of Chicago; others are the Civic Leagues of St. Louis and Cleveland.

There is no agreement as to which of these three plans is best. Evidently much depends on the immediate situation in the particular city. It is probably true that most of those who now follow the second or third device, fusion or nonpartisanship, hope that in time we may be able to have independent and significant city parties.

#### ORGANIZATIONS TO STUDY RESULTS OF MUNICIPAL GOVERNMENT.

Related to these associations, whose concern is with elections, are others which make it their business to watch and study city governments, make suggestions for improvement, and keep the public informed. Sometimes this work is done by the non-

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1. What items in a candidate's record would help you to decide whether to vote for him or not?
  2. In general the principle of publicity has often been declared to be the safeguard of a democratic government. What other forms of publicity than the publication of candidates' records could you recommend?
  3. One reason for publicity of the type described is the impossibility of each voter's knowing a long list of candidates. How many candidates are there on a regular city election ballot in your town or city?
  4. If you were in charge of a bureau of municipal research, what problems would you take up in connection with city streets? What in connection with city finances? Schools? Public charities? Prisons?
  5. When you had investigated any of these matters how would you get your findings before the people?
  6. Why is it difficult to get a fair and scientific study of city government read by citizens?

partisan organizations just mentioned, civic leagues, citizens' associations, and voters' leagues. In recent years, however, a whole series of special bureaus for this purpose, manned by experts devoting their whole time to the work, have sprung up. First of them was the New York Bureau of Municipal Research, followed by similar ones in Philadelphia, Cincinnati, Chicago (Bureau of Public Efficiency), and many others. They have turned on the light effectively in many instances and many times have secured the cordial cooperation of city officials in bettering traditional practices.

Here should be mentioned "city clubs"—groups of men or women who maintain club rooms in order that they may feel the encouragement of frequently meeting together with a common interest in city betterment. They have no single specific purpose, but usually through committees and public discussions have an important influence on public thought and conduct.

#### ORGANIZATIONS FOR SPECIFIC IMPROVEMENTS.

We come next to a group of associations interested in some specific improvement in city government and using various means of keeping their particular purposes before the public and urging their adoption. Such are, for instance, the civil-service reform associations, commission government clubs, short-ballot organizations, referendum leagues, municipal-ownership leagues, and many others. It is through such organizations that new ideas usually get their hearing. Some of the proposed reforms are ultimately adopted, others are rejected; but there can be no doubt about the value of the services of these associations in forming public opinion.

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1. Why should voluntary organizations of citizens study problems of city administration? Is this not the duty of the regular city officials?
  2. What is the commission form of government?
  3. What is the short ballot?
  4. What is the referendum? Where is it in actual operation?
  5. Find out who owns the water plant of your town. Who owns the street cars? Who owns the lighting system?
  6. Find out some city where these are publicly owned and find out what is the result of public ownership.
  7. What devices do organizations adopt to get municipal reforms discussed?
  8. What charity organizations are there in your city?
  9. What are the advantages of uniting them into a single organization?



ORGANIZATIONS DEALING WITH INTERESTS OUTSIDE THE  
GOVERNMENT.

All these groups have to do with the machinery of government, its organization and personnel. After all, however, more people are interested, and rightly so, in city activities which lie entirely outside the scope of government and law. We have a multitude of charity organizations, in the large cities running into the thousands, good, bad and indifferent; in many cities all the more useful of them are linked in associated or united charities associations which act as clearing houses and agents of cooperation.

Near these, but more interested in positive action than in charity, are such groups as the immigrants' protective league, juvenile protective association, legal aid societies, law and order leagues. With housing associations we find ourselves crossing into the field of public health where a whole series of other groups are at work: Infant welfare societies, visiting nurses' associations, anti-tuberculosis societies, mental hygiene societies. The general interest in education is represented not only by a growing number of parents' associations but in several cities by public education associations devoted to enlisting and guiding public thought upon the schools. There are playground associations and public art leagues and community music societies.

Devoted to an interest in the physical arrangement and care of the city are also many neighborhood improvement associations and city planning societies. Finally, there are taxpayers' leagues and tax reform associations, studying those very directly interesting questions that concern the public charge on their members' purses.

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1. Why should there be a special organization to deal with immigrants?
  2. The board of education in many cities has taken up the problem of educating the immigrant. What kinds of education do immigrants need?
  3. What are juvenile protective associations? What are child-labor laws? Why do parents ever need to be watched in their treatment of children?
  4. What is a legal aid society? Do not all people know their rights within the law?
  5. What are loan sharks? Whom do these loan sharks victimize?
  6. Describe the need for each kind of organization noted in the text.
  7. What are the special problems that are taken up by educational associations?



## ASSOCIATIONS WHICH OCCASIONALLY DEAL WITH CITY AFFAIRS.

All these are groups directly concerned with various special kinds of public activity. To complete our list of organizations through which the individual citizen multiplies his influence upon his city government, we must notice those groups which, existing for other purposes, do nevertheless take an active part in those sorts of city activity which touch their interest and sometimes the broader interests of the community. Such are the chambers of commerce and boards of trade, labor unions, real estate boards, women's clubs, of various sorts, and, lastly, the churches.

Through them all the active citizen speaks with more or less breadth of vision, more or less selfish bias, and greater or less effectiveness. Some of them are futile, some narrow and opinionated; but, taken altogether, above the clamor of the miscellaneous voices, comes the chorus of an alert democracy. Every one shares in the habit of public activity and none need feel excluded from genuine public interest for lack of companionship and cooperation.

## DUTY OF ACTIVE CITIZENSHIP.

It is in this general disposition not to accept passively government from above but to enter actively into efforts for city betterment that our main encouragement lies. To every citizen who takes his active part somewhere in the field of that contest, it matters not where, comes the satisfaction which is quite lost to those who attend only to their private business. There are some words of William James that express this call to public activity:

These, then, are my last words to you: Be not afraid of life. Believe that life is worth living, and your belief will help to create the fact. The "scientific" proof that you are right may not be clear before the day of judgment \* \* \* is reached. But the faithful fighters of this hour \* \* \* may turn to the faint-hearted who here decline to go on, with words like those with which Henry IV greeted the tardy Crillon after a great battle had been gained: "Hang yourself, brave Crillon! We fought at Arques, and you were not there!"

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## Chapter VI.

### BUSINESS ORGANIZATION AND NATIONAL STANDARDS.

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The first lesson of this chapter shows how business organization develops into a large community undertaking and how at each stage private and public control unite to make such organizations effective as agencies of production. The financial and intellectual resources of few individuals are sufficient to handle alone the large-scale enterprises demanded by modern business conditions. The partnership is the simplest form of combination of resources, and that was enough for nearly all the business that was conducted in this country up to fifty years ago. With increasing tendency to concentration the corporation came into use. Then combinations of corporations, or trusts, appeared. All business and industrial experience has shown that organization in large units is one of the greatest factors in efficiency. In the supreme need of the nation the greatest industry of the country—the railroads—has been brought under a single head, and the tendency is toward still greater combinations under national control.

Lesson A-21 describes the method by which money is raised for great industrial enterprises. Traffic in stocks and bonds is an essential feature in modern business organization, and the stock exchange is indispensable in modern business practice.

Lesson A-22 shows the origin and function of commercial banks. Fixed capital may be raised by selling stock or issuing bonds, but those devices are not applicable to all the exigencies of business. It often happens that more money than the amount in hand is required for temporary use. The banks are a convenient source from which to obtain it. The funds which the banks lend consist largely of money deposited by other people. Those depositors may draw "checks" or orders against the money which they have deposited and the checks serve as a convenient method of paying debts.

Lesson A-23 explains the service of money in modern life. It is the medium of exchange which is used almost universally, and it is the standard of values in all commercial transactions. The use of money and the money unit is so general that modern society is called a "money society."

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#### LESSON A-20. PRIVATE CONTROL OF INDUSTRY.

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During the last days of December, 1917, the Government of the United States took over the railroads of the country for the purpose of operating them during the period of the war. The congestion of freight had become so serious that the success of the American naval and military operations was threatened. The ordinary supplies needed by people in this country were also failing to reach their destinations. One reason for the difficulty was that the railroads were short of funds with which to pay for the upkeep and improvement of their rails, roadbeds, and buildings, and to purchase new cars and engines of which they were in need. The demands on the roads were greatly increased by the increase in traffic, and at the same time the Government was

borrowing huge sums of money from the people, so that it was difficult, if not impossible, for the railroads to borrow money without interfering with the Government's plans. So the President of the United States, representing the people of the whole country, took over all the railroads, and provision was made that money should be supplied them by the Federal Government for the period of the war. The Secretary of the Treasury has estimated that \$1,000,000,000 will be needed to put the railroads in efficient condition. There is also reason to believe that a better cooperation will result from the centralized control of the railroads.

#### CONTROL OF FUEL.

A few weeks later the Fuel Administrator, who had been appointed as an officer of the Federal Government for the period of the war, issued an order closing a large number of factories and public places of amusement and business in order that the railroads might be relieved of their extraordinary burden of carrying coal and in order that coal might be saved. This order called forth a loud protest from many people who were seriously interfered with in their business by the enforced holiday which the Fuel Administrator had declared.

#### CONTRAST BETWEEN PUBLIC AND PRIVATE CONTROL.

Both of these examples show the Government taking a hand very directly in the management of the country's industries. They also call attention by way of contrast to the fact that in ordinary times of peace the industries of the country are managed by a

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1. What effect would an inadequate number of ships for carrying produce to Europe have on the railroads of this country?
  2. Why is it not possible to meet a condition of congestion on the railroads by building more lines?
  3. Point out some of the reasons why private management of the various railroad lines would not meet the emergency as promptly as Government control.
  4. There is a commission of the National Government known as the Interstate Commerce Commission. What are the duties of this commission?
  5. The railroads have for some time been complaining to the Interstate Commerce Commission that they ought to have a right to charge higher rates. What bearing does the rate which the railroads can charge have on the physical condition of their lines?
  6. Show how the difficulties of borrowing money have increased.
  7. In what form does a railroad borrow money for its operations?

vast number of different people who are not officers of the Federal Government. A railroad has a president; a theater has a manager; and so on through the long list. The Government under ordinary circumstances leaves it to the president of the railroad to manage the affairs of the road and to the manager of the theater to conduct plays for the entertainment of the people who want to attend the performances.

It is not true to say that in ordinary times the Government leaves the management of a railroad entirely to the president and of a theater entirely to the manager. The railroad must charge a fair rate, and the theater must take reasonable precautions to protect its audiences against fire, and in many other ways the railroad and theater must recognize the rights of those who accept their services. The National Government has for a long time exercised its authority in fixing railroad rates, and the State and city have had laws on fire and protection.

In these and other like ways the Government has had a share in controlling industry. But the Government has left the details of management to those in immediate charge.

#### CONTROL THROUGH BUSINESS ORGANIZATION.

What are some of the ordinary forms of management? What is the management in charge of a railroad or a factory or a store? If we can get a clear idea of the way industries are managed, we shall see that there is a vast deal of organization in this country which is not a part of the Government, but is intimately bound up with good government and the orderly development of society in all its activities.

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1. Describe the working of the fuel order in your community.
  2. The fuel difficulties of January were due in part to local conditions and in part to national conditions. Were the orders from national and local authorities different in the case of your community?
  3. Could the National Government take possession of a train of cars loaded with coal?
  4. What were some of the industries which were exempt from the fuel order and why were these industries exempt?
  5. Show some points in which the National Government controls industry in times of peace.
  6. Discuss the reasons why it is desirable that the control of industry should remain in private hands.
  7. Did the fuel orders recognize differences between different parts of the country?
  8. If a stockholder is dissatisfied with the operation of a concern, how can he bring pressure to bear upon the officers?

## A TYPICAL EXAMPLE.

Let us take a single example of the way in which the management of a factory grows up under our modern industrial system. Some years ago a young man who was employed as a superintendent in a shoe factory decided that he would no longer work under the management of some one else, but would go into the business of manufacturing shoes on his own account. During his years of work as an employee he had saved enough money to buy a small building and the machinery necessary to begin work. He was accustomed to working with shoe machinery, and he found it easy to decide what machines would be best for a small shop and how to arrange them in the building.

## HE FOUND HE WAS A SPECIALIST.

Before he could begin work it was necessary for him to buy raw materials for making shoes—leather for the vamps, soles, and tops, nails for “pegging,” and thread for sewing. He found that he was not very well trained for making these purchases. His work of superintending in the shoe factory had taught him a great deal about working with the raw materials, but it had given him little information about the places from which the raw materials came or the prices which should be paid for them. It was only after a great deal of difficulty that he made satisfactory contracts to have raw materials delivered at his factory at certain times throughout the year.

In procuring orders for the shoes he had even more difficulty than he had encountered in purchasing the raw materials. The work in the factory had taught him nothing about the methods by which shoes are taken from the factory to the wearer.

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1. Find out the history of some large business concern in your immediate neighborhood, and learn what stages of development it has passed through.
  2. Find out about some form of business which is equally efficient in a small organization and in a large organization.
  3. What in general are the reasons why a big organization is more efficient than a small organization?
  4. What are some of the dangers that arise in business organizations through increase in size?
  5. Congress has passed laws forbidding unlimited consolidation of industries. Why should there be objection to unlimited consolidation?
  6. What is the amount of capital controlled by some of the great corporations of the country?

## ADDITIONAL CAPITAL IS NEEDED.

The year was little more than half gone when this young business manager discovered that his funds were getting low. His shop and machinery, the "fixed capital" as business men call it, had been paid for out of the savings with which he set up his business. But the "operating expenses" or "direct costs," such as light, heat, payments on raw materials, and the wages of his workmen, had to be met at regular intervals. On the other hand, payments from the merchants who had agreed to purchase his shoes would not come in until the shoes had been delivered to them.

In this emergency this business manager went to a bank and asked for a loan. The banker, after making an investigation of the business and conducting an inquiry concerning the reputation of the manager, decided to grant the loan. With the money thus procured the shoe manufacturer was able to continue his business successfully until the end of the year. Then as the shoes were delivered and payments from the buyers came in, he repaid the bank. Upon going over his accounts he found that after all outstanding bills were paid there remained a small amount of money which he could call his own profits from the year's business.

## THE ADVANTAGES OF A PARTNERSHIP BECOME APPARENT.

In thinking over his experiences of the year he realized that he had encountered many difficulties which might have been lessened if he had had a partner. He could not be both shop superintendent and sales agent. He decided that he needed a partner

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1. Review the earlier lessons in which statements were made about specialization in modern industry. Make an analysis of some industry which you can find in your community and find out how many specialists there are in that industry.

2. If one wanted to train himself to be a manager of an industry, what would be the best line of training to adopt?

3. Carry out the discussion suggested in the last question by distinguishing between the different lines of activity within some business organization. If a manager is to be chosen from one of these lines of activity within the industry, which one is most likely to prepare him to be a manager?

4. Mention some activities of a manager which are entirely different from those of any operator within the industry.

5. When a business man asks for a loan at a bank, what is required of him before the loan is made?



to sell the shoes he manufactured. If he could make such an arrangement, he could devote all of his own efforts to supervision of the factory and make sure that the shoes were made in the best least expensive way.

A salesman for another shoe factory, who had accumulated a small savings account, seemed a desirable partner, and he was induced to join the business. The two men consulted a lawyer, who drew up for them a simple contract which stated in a general way the work to be done by each of them and the amount of money which each had invested. It was agreed that profits and losses arising from the business should be shared equally.

The lawyer made it clear to them that the laws, sometimes of the National Government and sometimes of the various States, had been carefully drawn up to make it possible for men to form the types of business organization that would be most useful in carrying on their enterprises. He explained that one great purpose of government was to formulate the rules of the game by which men in business must be guided in their conduct. "It is because there are such rules," said he, "that we are able to deal with one another with confidence."

The lawyer said:

In a partnership such as you men have formed, each partner becomes, as it were, the agent for the other. If either of you makes an agreement with other persons concerning a matter of business, both of you are bound. Furthermore, remember that each of you has put a certain amount of money into this business. If your firm, as your partnership is called at law, is not successful in its undertakings, you will be likely to lose this money. But that is not all. If your firm becomes indebted to anyone,

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1. Describe the methods employed by factories in securing orders for their goods.

2. Among the devices employed is advertising. Look up the different forms of advertising in the papers, and see how many of them are the advertisements of factories and how many are advertisements of dealers. Distinguish between a dealer and a factory as a center of distribution of goods.

3. Find out what are some of the laws which relate to partnerships.

4. Since one partner is the agent of the firm, would it be possible for him to sell out the business without the consent of his partner?

5. Lawsuits are sometimes classified as civil suits and criminal suits. What is meant by a civil suit?

6. What is meant by equity in law? Get an illustration of a case in equity.

7. Most lawyers advise their clients to settle their difficulties outside of the courts, if possible. Why do they give this advice?



the creditor has a right to obtain, by a lawsuit, not only the money which you have put into the business but enough of any other money or property which either of you possesses to repay him.

#### SPECIALIZATION PROVES PROFITABLE.

The new firm was very successful. With each partner devoting his time to the field in which he was a specialist, substantial gains were made. At times there were disagreements about conducting the general affairs of the business, but more often the discussions of the two men resulted in better business policies than either would have formulated alone. Once during the first year it was necessary to borrow some money from the bank. On this occasion the banker was more ready to make the loan than he had been the year before. The business was now much better established, and the promise of two men, where each was liable, made the banker more sure that the money would be repaid.

#### THE BUSINESS OUTGROWS THE PARTNERSHIP TYPE OF ORGANIZATION.

Each year the orders for shoes increased, and it began to be more and more difficult in the small shop to manufacture enough shoes to fill the orders. Finally, it became apparent to the members of the firm that they must enlarge the shop into a great factory if their business was to continue to grow. This would involve renting or purchasing more land, constructing a large building, purchasing a great amount of machinery, and hiring many more employees.

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1. Why does a business corporation get its charter from a State rather than from a city? In this connection review an earlier lesson in the series which deals with the powers of the State and the city.

2. Why are the items mentioned in the text required as the basis for granting a charter to a corporation?

3. A business corporation is required to make some kind of a public report of its transactions. Show why the situation is different with such a corporation and with a partnership or a private business.

4. Show why there is a great deal more legislation controlling the activities of a large corporation than there is controlling the activities of a small privately owned business.

5. In what denominations do business corporations sell shares? Explain the reason why the amount of a single share differs in different cases.

6. What is meant by the statement that a man who owns 51 per cent of the stock of a company controls the company?

Each of the partners had saved some money from the profits of the business, but together they did not have nearly enough to make the changes desired. In this situation they again consulted their lawyer. He said at once:

To enlarge the factory in the way which you describe you will need at least \$100,000. The thing to do is to form a corporation. To do so is easy and inexpensive and should provide all the money that is necessary. If you do not object, I shall be glad to join you and look after the legal matters of the company.

To begin the formation of a corporation we must secure certain blanks from the secretary of state at the State capital. These we must fill out, giving our names and addresses as incorporators, the name of our new company, the purpose for which it is formed, the principal place at which we shall transact business, the amount of money which should be invested to make it successful, the way in which this money is to be obtained, and some statements regarding the way the new company will be managed. After this information is filed with the proper State officers, we shall be given permission to get money by selling other people an interest in the company.

We shall divide the ownership of this shoe business into a thousand parts or shares. We shall represent each share with a piece of paper called a stock certificate. We shall offer the shares for sale at \$100 each. When all have been sold there will be a total of \$100,000, which is the amount needed. Everyone who buys one or more of these certificates has an interest in the new business. You men who have been operating the business as partners, of course, may exchange the shop, machinery, and materials which you have on hand for shares of stock. You may also purchase additional shares in the same way as anyone else.

You may not have as much to say in directing the corporation as you had while your business was a partnership, because the ownership of each

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1. Why is the formation of a corporation more common in the case of industries carried on in the city than it is in the case of farming?

2. Associations are sometimes formed among farmers for the sale of their fruit or crops. What is the difference between an association and a corporation?

3. Farmers sometimes organize a cooperative insurance company. How does this differ from a corporation?

4. The proposal has sometimes been made that the Federal Government grant charters of incorporation to business concerns. Do you see any objection to such action on the part of the Federal Government?

5. Farmers' associations have sometimes exercised a large political influence. Is there objection to the organization of farmers for political purposes?

share in a corporation such as we are forming carries with it the right to one vote regarding business policies. But if you men secure a majority of the shares, you will have a larger number of votes than all the other shareholders and can direct the new corporation as you please.

It may seem to you that it will be difficult to get people who do not know us and who are unfamiliar with the manufacturing of shoes to invest money in our enterprise. I do not think there will be any trouble in this matter, however. A corporation differs sharply from a partnership in a very important respect. A creditor of a partnership may satisfy his claim from any property of any partner, but the owners of shares in a corporation are not liable personally for all of the debts of a corporation. They have what is called at law "limited liability." This means simply that if our business is unsuccessful, no stockholder can lose more money than he has paid for his shares of stock. It is because shareholders have this limited liability that people are comparatively willing to invest money in a corporation. These shares may be sold by their owners to anyone who wishes to buy them. This fact, which makes it easy for shareholders to withdraw their interest at any time, also encourages investment.

#### THE NECESSARY CAPITAL IS SECURED THROUGH THE CORPORATE FORM OF ORGANIZATION.

The partners decided to form a corporation and directed the lawyer to take charge of the matter for them. As soon as permission had been received from the secretary of state, shares in the new corporation were offered for sale. Many persons who knew nothing whatever about making shoes, but knew of the success of the factory, were very glad to invest some of their savings in the corporation. It was not long before all of the shares of stock had been sold. A meeting of the shareholders was then held, and it

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1. It has been said that publicity is the chief instrument in keeping business and public life pure. What is the meaning of this statement?
  2. Considering the Government as a corporation for doing business of certain types, what is the difference between the Government as a business organization and a business corporation?
  3. The tendency evident in business is to consolidate capital and control. Can you point out other tendencies toward consolidation in modern civilization? For example, what are the facts with regard to centers of population?
  4. What are the dangers that attend consolidation of population?
  5. What steps have been taken by corporations to counteract the evils that come from concentration in connection with their business?
  6. Why should the Civil War have marked a turning point in the matter of business organization?

was decided to elect the original manufacturer president of the corporation and to elect his partner vice president. Other officers were elected and a board of directors, composed of the officers and seven or eight other shareholders, was chosen. The board of directors had the power to direct all the affairs of the corporation.

The business continued to be very successful. Every year the profits were divided among the shareholders, the amount going to each owner being in proportion to the number of shares owned.

#### THE HISTORY OF BUSINESS ORGANIZATION IS EXEMPLIFIED IN THIS STORY.

The history of this factory is typical of thousands of business organizations which have grown up during the past half century. There was a time when almost all businesses were conducted in a small way by individuals. In those days individuals used their own money for buying or renting the building in which their business was carried on; they used their own money for purchasing the necessary machinery, the raw materials, and for hiring employees. They found it possible to supervise, if not to perform, all the operations of their enterprises. Although there were many partnerships and some corporations before that time, it was not until after the Civil War that the corporation became a common form of business organization in our country. From 1890 to the present, corporations have increased with especial rapidity, until now they are common even in small enterprises, and they are practically the only form of organization in conducting such large undertakings as mines, railroads, banks, and manufacturing plants. It is estimated that there are now nearly a million corporations in the United States.

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LESSON A-21. BORROWING CAPITAL FOR MODERN BUSINESS.<sup>1</sup>

In the previous lesson we saw how a small business conducted by a single individual grew into a very large business organized in the form of a corporation. The growth of this shoe factory is typical of what has been happening in nearly every line of business since the period of our Civil War. Most businesses of to-day are conducted on a large scale. Some of them, such as railroads, packing houses, steel plants, and automobile manufactories, employ capital amounting to tens and even hundreds of millions of dollars. A great number of others—there are perhaps 100,000 corporations of this sort in the United States—have a capital of from \$100,000 to \$1,000,000. Indeed, there are comparatively few businesses to-day which do not possess a capital of at least several thousands of dollars. Everybody who goes through a large mine, factory, or mill is greatly impressed by the wealth or capital that is involved; and one commonly hears the remark on such occasions: "I certainly should like to have what that factory manager owns; yes, or even one-tenth of it."

## WHO OWNS A CORPORATION?

The truth of the matter is that the envied manager seldom owns so much as one-tenth of the capital of the corporation which he manages. He may own even less than a hundredth part of it. There are usually a large number of owners called, as was stated in the last lesson, shareholders or stockholders. For instance, some of our great railways are owned by more than 100,000 stockholders. Some of these stockholders own very small amounts, a few hundred or a thousand dollars. A few of them may own very large amounts of stock, but in the main the shares are widely held in comparatively small amounts.

The reason why modern businesses raise capital by selling stock to a large number of people was also made clear in the preceding lesson. One man alone usually does not have sufficient capital of his own to conduct a business on a large scale; indeed, it is seldom that even several partners have sufficient funds to develop a business large enough to obtain the best results. Those who organize these enterprises, therefore, seek to bring in a large num-

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<sup>1</sup> This lesson was prepared by H. G. Moulton, assistant professor of political economy, University of Chicago. It describes how capital is raised by the sale of stocks and bonds and at the same time shows how essential capital is to production.

ber of outside investors. The corporation, with its provision for limited liability, whereby a purchaser of stock is liable for debts of the corporation only to the extent of his individual holdings, has been developed as an easy means of accumulating the capital necessary for large business undertakings.

#### THE SALE OF STOCKS DEPENDS ON CREDIT.

It should be carefully noted that when a man buys stock in a given corporation he not only expects to get dividends on his investment, but he also hopes to get back his original investment if the corporation some day goes out of business.

Although the shareholder has the right to vote on matters of policy, he usually knows so little about the business that he seldom takes the trouble to use this right. In practice, the typical shareholder leaves the management of the corporation to its officers, trusting them to use both honestly and wisely the money he has loaned them. The officers and directors of the corporation are also shareholders, and they usually exercise their right to vote; it is the so-called outside investor who does not take the trouble to vote.

People are willing to buy stock in a corporation if they have confidence that it will be efficiently and honestly managed. The honest and efficient corporation has what is known in the business world as credit; it can borrow capital at favorable rates. The dishonest or inefficient corporation can seldom borrow at all.

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1. What is the largest business in your community? Is it a corporation? If so, find out the amount of stock and the amount of bonds which it has issued.

2. Are most of the large businesses which you know about corporations or partnerships?

3. Look up the statistics for some corporation and find out, if you can, how many stockholders there are. Find, also, how great a percentage of the total stock is owned by any one person.

4. If possible, look at a certificate of stock ownership—a share—and see exactly what is written on it.

5. When people hear of the great profits which corporations make, they should relate the profits to the capital invested. What per cent of profit do small businesses expect to make? Compare these expectations with the legitimate expectations of big concerns.

6. What are the annual expenditures of some railroad? What are its profits?

7. Is the president of a railroad its largest stockholder?



## THE DIFFERENCE BETWEEN STOCK AND BONDS.

Besides selling stock, corporations also raise funds by the sale of bonds. Let us see how these two forms of securities, as they are called, differ. Suppose a corporation has already expended \$200,000 in the erection of a factory and that it needs \$50,000 more with which to complete the building and equip it with the necessary machinery. Further sale of stock appears unwise, and the managers decide to sell \$50,000 in bonds. I buy one of these bonds valued at \$1,000. In what way does this bond differ from a share of stock? In the first place, when I buy a bond I do not become a part owner of the corporation, but, I become a creditor of the corporation; the bond is a debt of the corporation. The bond is a definite promise to pay me interest, say at 5 per cent, and to pay me back my \$1,000 at some definite date in the future, say in 10 or 20 years. In the second place, it is more than a definite promise to pay me interest and return the principal (\$1,000). There is also an agreement that if the corporation fails to pay its bondholders either interest or principal, I, with the other bondholders, may take possession of and sell part or all of the property of the corporation. This agreement is drawn up in definite legal form and is called a mortgage. The bondholders may foreclose on the mortgage, as the phrase goes, if interest and principal are not paid.

It will be seen from the statement of the differences between bonds and stocks that the bondholder is more certain of getting a return of his investment than the stockholder; he has the first, or prior, claim on the earnings of the business. For this reason the bond usually yields a lower rate of return, but the bond investment is more attractive to persons of limited experience and to those whose savings are so small as to make it especially advisable to invest them in safe or gilt-edged securities.

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1. If you wanted to form a judgment about the credit of a corporation, how would you go about it?
  2. There are a number of journals which publish financial pages of advice to investors. Look up one and see what kind of advice is given.
  3. If a new corporation promises abnormally large percentages on its stock, how does that affect your judgment? Why?
  4. Examine a bond and find out what the terms of the agreement are.
  5. How many different kinds of bonds can you find out about?
  6. Is it possible for a person to own shares in a company and receive no dividends in a year? Does this always mean that business is poor?
  7. What would it mean if a business did not pay interest on its bonds?



## SALE OF SHARES TO ACQUAINTANCES.

Having described the credit instruments—bonds and shares—which corporations issue for the purpose of raising capital, we may now show how these securities are marketed, that is, how the corporation as a borrower finds the individuals who have money to lend and how the necessary exchange of money for the stocks and bonds is accomplished.

First, let us consider the marketing of stock. In the case of a small corporation which wishes to sell only a few thousand dollars worth of stock the process is simple enough. Usually a small group of men, all directly interested in the formation of the corporation, subscribe for the larger portion of the stock. A small number of others will be "let in," as the term goes. These are usually acquaintances who are known to have funds available for such a purpose. In such a case as this the marketing of the stock is simply an affair of personal relationship and is accomplished by direct conversation with friends.

## SALE OF SECURITIES THROUGH AGENTS.

Where sufficient stock can not be sold among personal acquaintances the problem becomes more difficult. People who do not know the officials of a new corporation, and who know little of the

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1. Look up the newspaper reports on some corporation and find the difference in rate of sale of its stocks and bonds.

2. Preferred stock dividends are sometimes 7 per cent; common stock dividends may be more or less than this amount. What is the difference between preferred and common stock?

3. Which would you rather own, preferred stock or common stock? Why?

4. Which would you rather own, bonds or stock, either preferred or common? Why?

5. Get hold, if you can, of a prospectus setting forth the attractiveness of a new enterprise. Read it over carefully and see if you are convinced that this enterprise is sound.

6. Make a list of things that you would like to know about (a) the management of this new enterprise and (b) the character of the business itself.

7. Why do people consider municipal bonds and Government bonds safer than many business bonds?

8. What effect does the safety of an investment have on the price paid for bonds?

prospects of success for such a corporation, must be convinced that it offers a good investment opportunity. A prospectus is usually prepared which discusses the strong points of the enterprise; it enumerates the qualifications of the directors of the corporation and sets forth the many reasons why, in their opinion, this business is likely to prove a success. This prospectus is mailed to a list of persons who may possibly be interested. Salesmen often are employed to make a personal canvass of certain people believed to be possible investors. Various financial newspapers and magazines are often paid for advertising the corporation.

A group of financial middlemen has also grown up who specialize in the business of marketing shares of stock. Brokers or dealers in these investment securities prepare an advertising folder setting forth the main facts about a number of attractive investments which they are offering for sale. This folder is mailed to a large list of clients or customers and to "prospects."

#### SPECIAL AGENCIES FOR THE SALE OF BONDS.

In the marketing of bonds we find still other types of financial middlemen. The best bonds are usually marketed through a series of institutions as follows: First, great banking corporations, sometimes called houses of first purchase, which undertake to sell the bonds in great quantities, or in blocks, as they are called; second, underwriters who temporarily advance the money so that the borrowing corporation can get the funds needed even before the bonds are purchased by the final investors; third, bond

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1. How does a broker get profit from his business?
  2. There are other kinds of brokers than those who sell securities. Describe some of them and tell how they make profit.
  3. The savings bank takes risks. Is this true?
  4. Why is it that the more speculative securities are not handled by the large bondhouses? Does the large bondhouse guarantee that the investment is safe?
  5. Is there any reason why you should prefer to put your money in a savings bank rather than invest it in bonds offered by a bondhouse?
  6. An insurance company does two types of business. It protects a man's family in case of his death, and it is a sort of savings institution which enables a man to lay up funds for his old age. Which is more important, the investment or the insurance aspect of such business?
  7. Why should the Government be more rigid in its laws about banking than it is in its laws about other types of business organization?

houses, which receive the bonds from the houses of first purchase and undertake to sell them to the final purchasers. These bond houses have lists of customers to whom they appeal with each new investment opportunity. Among their regular customers are (1) private individuals and business organizations, (2) insurance companies, and (3) savings banks.

#### SAVINGS BANKS.

In one sense the savings bank is not a final purchaser of the bonds, because it is investing, not its own funds, but those of its depositors. Many private investors who have never formed the habit of buying bonds put their money in savings banks, where they get interest at the rate of 3 or 4 per cent. With these deposits the savings banks buy bonds on which they receive 5 or 6 per cent interest, the difference in interest rate being the bank's source of profit. The reasons why so many people put their money in the savings bank at the lower rate rather than invest it in bonds at the higher rate are that they often distrust their own judgment about good investments, that it is simpler and more convenient, and that it is usually easier to get the money back in case of need. The law under which these banks are organized is strict in most States, and only high-class securities may be purchased. This furnishes further protection for the small investor. Finally, the person who has saved a few dollars could not invest to advantage because high-class securities usually come in denominations too large for such savings. The bank, by putting together

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1. It is sometimes said that the stock exchange is a gambler's organization and performs no useful service. Do you think that this is true?
  2. Where would you be able to sell securities which you own if there were no such institution as the stock exchange?
  3. Do you suppose the constant buying and selling of stock and bonds on the exchange gives them a more definite and a better-known value than they would otherwise have?
  4. If you had some money to invest, could you tell anything about the chances for a good return on your investment by consulting the quotations of various bonds and stock exchanges?
  5. Do you suppose that large investors are guided in their investments by the quotations of stock and bonds on the exchanges? Can you see any social importance in this?
  6. What are some of the forms of speculation which are carried on at the stock exchange? What is selling short? What is purchasing on margin?

the small savings of many people, can give them some of the advantages which large investors enjoy.

#### THE STOCK EXCHANGE.

There is still another financial institution, however, which plays a very important part in the process of marketing bonds and stock, one to which all the financial institutions and agencies we have been discussing are very closely related. That is the stock exchange. The stock exchange is a place where brokers come together daily for buying and selling securities. Many kinds of bonds and stock are listed on the stock exchange; that is, they are permitted to be bought and sold there. For the poorer and more speculative securities there is frequently a so-called curb market outside the exchange building, where buyers and sellers meet from day to day and deal in securities. Such curb markets are conducted under informal rules rather than under the definite formal regulations of the stock exchanges.

The great importance of the stock exchanges in connection with the raising of capital lies in the fact that they enable a holder of a listed stock or bond to sell it at any time he desires. The ordinary investor is the more willing to buy bonds or stock in a corporation provided he knows that he can withdraw his investment when it suits his convenience to do so. But the corporation needs the funds permanently; it obviously can not pay the shareholder back at a moment's notice whenever he wants to use his cash in some other way. If the investor is to get cash for his bond or stock, he must sell to some one who wants to buy. The individual investor might write a hundred letters or so to various people, some of whom might possibly be

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1. When the Government has securities to sell, how does it get them on the market?
  2. What are some of the new methods adopted during this war?
  3. Is there such a thing as shares of stock in the Government? What about bonds? Explain the answer that you give.
  4. Watch the papers for a few days and find out what general movements take place in the stock market.
  5. When war broke out the stock market closed up. Why?
  6. The relations between the stock markets of Europe and of this country were often affected by differences in the time between Europe and America. Why should this be so?
  7. There are some stocks that are worth a great deal but are not traded in on the exchange. Find out why.

willing to buy the securities when he wants to sell them. But such correspondence would be costly, and what is still more important it would take time to sell bonds and stock by this method. The investor might have to wait weeks for his money when he needed it badly at once. The stock exchange offers an opportunity for immediate sale. The investor may sell his securities there, with the aid of a broker, practically any day, for there are nearly always buyers at the exchange who are willing to purchase good securities at a favorable price. It is because he is thus able to withdraw his funds from a corporation at any time that he is willing to invest them.

The stock exchange also serves another important purpose. Because it is a center of large buying and selling, it becomes a center for information. Those who have money to invest and those who have shares to sell turn to the exchange for information about the rate at which money can be had and about the standing of particular shares and bonds. The newspapers of the country devote a good deal of space to an announcement of the prices paid at the exchange for all the standard stocks, and business men watch the market prices of securities and use them as a guide in their business activities.

Many people regard the stock exchange as a mere gambling institution, but from what we have said it is clear that it performs a service of incalculable importance to the business world. Indeed, modern large-scale corporate industry would be impossible without organized markets for securities. There are evils connected with the stock exchange, it is true, but the good far outweighs the bad. The chief evil is that many people who are ignorant of the principles of investment and of the rules of the game attempt to speculate. This is almost certain to lead to their downfall. It is a game that only the expert can play with safety.

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LESSON A-22. THE COMMERCIAL BANK AND MODERN BUSINESS.<sup>1</sup>

In the preceding lesson we saw how various forms of financial institutions aid the business man in raising a fixed capital. We may now discuss the service of the most important of all financial agencies—the commercial bank. Modern commercial banking began in England about the middle of the seventeenth century. If we begin our study by going back to that period, we shall be able to understand the present complex system of commercial banking much more easily.

## HOW THE GOLDSMITH BECAME A BANKER.

At that time the goldsmith was a man who had in his possession quantities of gold. He used the precious metal for making all kinds of works of art. Plate for the table was wrought out by hand in most elaborate patterns. Jewelry was made for those who had wealth and could protect it. The homes of princes and rich merchants were decorated with the products of the goldsmith shops. In time, however, the goldsmith changed his profession from that of a worker in gold to that of a dealer in gold and other money. The business of banking originated with him.

In order to understand the way in which the goldsmith became a banker let us imagine ourselves living in the times in which he lived. We must remember that there were no banks and few places of safety where gold could be stored. Suppose I am a goldsmith and have a strong box in which to keep my supply of gold. Mr. Smith, a merchant who lives next door, knows this fact and says to me one day: "I wish you would let me put my surplus cash in your safe until such time as I want to use it again. My strong box is not a very good one and I can scarcely sleep at night for fear that my money will be stolen." "Very well," I reply, "You may put your money in my safe and I will give you a receipt for the amount and agree to return your money to you whenever you desire it. Of course, I shall have to charge you a small fee for my trouble and risk." Mr Smith agrees to the plan and places \$1,000 in my safe.

A few weeks later Smith wishes to pay Jones, another merchant near by, exactly \$1,000. To make the payment Smith would

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<sup>1</sup> This lesson was prepared by H. G. Moulton, assistant professor of political economy, University of Chicago. It explains how commercial banks originated and shows how they contribute to the use of capital in business.



have to withdraw the \$1,000 from my safe and carry it down the street to Jones's place of business. Smith remarks to Jones that he is afraid he may be robbed on the way, and even if he isn't, some thief is likely to learn that a considerable sum of money has exchanged hands and the receiver will need to guard it carefully. This gives Jones an idea and he replies, "I wonder if the goldsmith would not be willing to keep this money for me as well as for you. Let us go and find out." They come to me, and after listening to Jones's request I ask Smith for his receipt. Smith hands it to me and I tear it up. Then I write a receipt for the same amount and give it to Jones. By this simple method Smith has paid his debt to Jones and the money has remained all the while in my safe.

#### HOW CHECKS CAME INTO USE.

I soon improve on the method of transferring claims to money in my safe. The next time I give Smith a receipt for \$1,000, which he deposits, I say to him: "Any time you wish to transfer this \$1,000 to some one else all you need to do is to send that man to me with a written order for \$1,000, whereupon I will deduct from your account \$1,000 and pay him the cash or give him a receipt for the amount, whichever he prefers." A few days later Mr. Brown comes to me with an order from Smith requesting me to pay \$500. I deduct \$500 from Smith's account, leaving him

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1. Find some bank near your home and learn what kind of a bank it is. If there are several, learn about them.

2. Define a commercial bank, a savings bank, a trust company, and a bond house.

3. Some banks do several different kinds of business. Why?

4. A commercial bank makes its loans usually on short-time promissory notes rather than on long-time bonds. What is the reason for this?

5. "I am a retailer of general merchandise. I buy on November 1 \$3,000 worth of goods for sale during the holiday season." For how long a period of time ought my promissory note to the bank run? Why?

6. "I am a farmer and I buy farm machinery costing \$500 with which to grow and harvest my crops." For how long a time should the note to the bank run?

7. What will be the result if I show bad judgment in deciding how long my note ought to run?

8. What is the form of note which the bank will want?



a net credit of \$500. Brown says he would like to leave his \$500 with me, so I give him a receipt for that amount with a right to transfer it by means of a written order to anyone else. A month later Mr. Dixon comes to me with an order drawn by Brown asking me to pay him \$300. I deduct \$300 from Brown's account and open an account with Dixon for \$300.

The habit is rapidly growing of passing orders or checks from hand to hand instead of withdrawing the actual cash each time. In the course of a few years so many people have left their funds with me, and there is so much bookkeeping involved in keeping all the accounts straight, that I decide to give up my business as a goldsmith and devote all my time to taking care of this new business that has developed. I become a banker, pure and simple.

#### HOW THE GOLDSMITH CAME TO MAKE LOANS.

By this time I have \$100,000 in my safe. Every day many people present orders or checks drawn by the different depositors against their respective accounts. To my surprise I learn that about three times out of four the man who presents the order does not withdraw cash, but instead asks for a credit account with me against which he can draw checks when he wishes to make payments. Everybody remarks how much more convenient and how much less risky it is when one does not have to transfer the actual money.

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1. "I am a manufacturer of woolen cloth. I require \$5,000 with which to buy the raw materials." If it takes three months to manufacture these raw materials and sell them, for how long a time should my note to the bank run?

2. "I am a manufacturer. I need \$5,000 with which to enlarge my factory." For how long a time do you suppose a bond issued for this purpose would have to run?

3. When a man puts a note in the bank he is sometimes asked to get it indorsed. What is an indorsement? Why does the bank ask it?

4. Banks make loans where they require the borrower to deposit some collateral security with the bank, in addition to the promissory note. What is collateral security? Of what is it composed?

5. Look up in some history a description of the period in which goldsmiths flourished.

6. Find out what a guild was.

7. Some guilds became very rich. How?

I ponder over the fact that only once in four times does anyone ask for cash. I have \$100,000 with which to pay \$100,000 in claims against me, but I am never called upon to pay more than \$25,000 at one time. Why not, therefore, loan \$75,000 at interest and increase my profits. I try this and find that my ability to pay \$100,000 is not impaired so long as I make short-time loans of a kind that are sure to be paid promptly when they fall due. So long as only one dollar in four is called for in cash a 25 per cent reserve of specie is all that is necessary.

Finally, I get a new idea. Instead of loaning \$75,000 of my cash, why not plan to keep the whole \$100,000 as a reserve and carry on an interest-collecting business of my own? Twenty-five thousand dollars is to the \$100,000 as \$100,000 is to \$400,000. If with a reserve of \$25,000 I can carry \$100,000 in claims for cash against me, why could I not with a reserve of \$100,000 create claims against me equal to \$400,000? I try out this idea. I loan \$300,000 to business men. I give them credit accounts against me, and for the sake of convenience they write checks against these accounts rather than withdraw the actual money when they wish to make payments. I find that the people who receive the checks are no more desirous of taking away cash than were the people with whom I dealt before. Now, as formerly, one-fourth of the checks are presented for cash and three-fourths are deposited with me as credit accounts. Thus I carry a total of \$400,000 and need only \$100,000 actual cash with which to pay. Since most people prefer

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1. Find out from the financial statement of some local bank with which you are familiar how they have used their funds. What percentage has been invested in short-time promissory notes? What percentage has been invested in stocks and bonds?
  2. Are the borrowers from your local bank mainly local men or are they outside borrowers?
  3. From this financial statement find out how much cash reserve this bank has in proportion to its deposits.
  4. In case the bank needed more actual cash, how could it secure this cash?
  5. Does the bank have some bank in another city from which it could borrow in case of need?
  6. Does this bank do any business in collecting notes for individuals or for banks in other communities?
  7. What services does this bank perform for the business men of your community in addition to making them loans and taking care of their cash?

the credit account I am able to meet all claims with my cash reserve of 25 per cent of my outstanding accounts.

#### LOANS OF COMMERCIAL BANKS ARE OF SHORT DURATION.

Commercial banks to-day make loans to business men amounting to billions of dollars annually. These loans are mainly for short periods, and business men use them largely for working capital rather than for plants and equipment. The modern business manager not only does not own all of his plant and equipment, but he does not even own all of the capital required to operate a factory or run a store; he borrows funds on short time with which to buy raw materials for manufacture and stocks of merchandise for sale. It is the function of the commercial bank to furnish this working capital.

#### THE BANKER AS A JUDGE OF BUSINESS ACTIVITIES.

In the loaning of funds the banker has to exercise a great deal of judgment. If he loans to business men who are inefficient, or dishonest, or engaged in lines of business which are speculative in their nature, he may find that his loans are not repaid at the date of maturity. There may be heavy losses involved, which reduce the banker's profits. Even slow payments are looked upon with disfavor by the banker because his ability to expand his own obligations as described above depends largely upon the certainty and promptness with which his debtors pay him.

1. It is sometimes said that a banker is in a position to control the business of his community through his control of the purse strings. He can make or break any business man. Do you believe that this is true?

2. Can a banker misuse his power with safety or would he in the long run lose out if he did not treat everybody fairly?

3. Do you think it is the duty of the banker to refuse to loan funds for an enterprise which he regards as of doubtful safety or which he thinks would not be able to repay its loans promptly when due?

4. Would you loan funds to any business which you thought was not likely to be punctual in its payments and ultimately successful as to its earnings?

5. The statement is made in the text that promptness is an important factor in payments. What is the law in this matter?

6. What happens when a man draws a check against a bank but has no deposit or an insufficient deposit to meet the check?

7. Does a bank ever allow a patron to overdraw his account? Why?

The banker therefore makes a careful study both of the borrower and of his business before a loan is granted. Elaborate credit departments have been developed for the purpose of this study, and the banks succeed, in fact, in discovering with a good deal of certainty what business men and what businesses are likely to prove prosperous and are therefore entitled to financial aid. The banks control the purse strings and are thus able to guide or direct the expenditure of labor and capital into the fields of industry where it will be of greatest service to society.

It should be added here that the commercial banks of the present time buy large quantities of bonds and thus aid and direct the growth of fixed capital as distinguished from working capital.

#### COMMERCIAL BANKS CREATE FORMS OF MONEY.

There is one further function or service of the commercial bank which must be mentioned here. We have been speaking of checks or orders drawn against money deposited in a commercial bank. These checks are used to pay debts; they pass from hand to hand in exchanging goods, thus serving in lieu of the actual money which is in the bank. Besides these checks, promises to pay money are also issued in the form of bank notes. These pass as money everywhere in the channels of trade, and most people never think of them as being in any way different from Government money. Checks, however, pass from hand to hand only by indorsement.

So convenient is this check currency that in the modern business world it has largely displaced money as a means of paying debts. In large business transactions cash seldom changes hands nowadays. Even in the case of small retail purchases and sales, the check is more and more taking the place of money.

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LESSON A-23. THE SERVICES OF MONEY.<sup>1</sup>

In the first lesson of this leaflet we saw how a man with a small amount of money began business in a shoe factory. We saw how he used first the partnership and then the corporation to increase available funds and thus give him control over more men, materials, machines, and buildings needed in making goods. In the other preceding lessons it was pointed out that even the larger business organizations have not enough money to conduct their industrial affairs on the large scale which is now so common and that they must make use of borrowed funds; that is, they must ask for credit. We have also seen something of how borrowed capital, both for fixed expenses and operating expenses, is procured.

## MONEY SECURES CONSUMERS GOODS.

The uses to which business men put money are by no means the only services which it performs. Perhaps the uses of money with which we are most familiar are those which are common in family life. The family uses money constantly in buying the goods it uses or consumes. A comfortable home can be rented or purchased with money. The butcher and grocer are glad to fill the larder with edibles in exchange for it. The owner of the clothing store provides clothing for the family that has money to offer him. A doctor's services can be employed, theater tickets can be obtained, books can be provided, and travel is possible for the family with money to exchange for the enjoyment of these things.

## MONEY SERVES AS A MEANS OF PROVIDING FOR THE FUTURE.

A second use which the family makes of money is in saving for a rainy day or for old age. As everyone knows, the time may come when there will be no regular income which the family can spend in obtaining a place in which to live, or the things to eat, wear, and enjoy. The coming of old age brings such a time in many homes. There are at least two ways in which the family can provide for such a period. One way is to follow the example set by the bees and squirrels and store up supplies

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<sup>1</sup> This lesson was prepared by Leverett S. Lyon, instructor in the University High School and School of Commerce and Administration of the University of Chicago. The purpose of the lesson is to explain that we use a pecuniary scheme of calculation and how this method of calculation makes it possible to organize the activities of a modern community made up as it is of specialists.

enough to last through the hard times. The families of the American Indians adopted this method in great measure. They stored many of the things they needed for food and clothing. Families in modern nations do not attempt to provide for the future in this way; they adopt the modern method of saving. It is much more convenient and easy to accumulate wealth in the form of money, and then, when the time of stress comes, use the money in purchasing whatever is needed.

#### INVESTMENT VERSUS HOARDING.

When families accumulate wealth they do not ordinarily hoard it merely by piling it up and hiding it until they are ready to use it. In some backward communities this is done, especially by persons who are too ignorant to know that there are better ways of storing money. It is this practice that gives rise to the stories one sometimes reads of thieves who dig in cellars, cut up mattresses, and tear up floors trying to find the hiding places of stored-up money. The intelligent family, instead of hoarding money, deposits it in a savings bank. Of course, the identical money which is put in a bank will not be paid back, but the family may demand an equivalent amount in the future. We have seen in an earlier study that the banker loans the deposits to business men and is thus able to pay the depositor with interest.

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1. The people of backward communities often trade or barter. Suppose a farmer wishes to exchange wheat for clothes in such a community. What difficulties may arise in making the exchange?

2. Why are the grocer, the clothier, and the house owner all so willing to exchange their possessions for money? Can they consume the money?

3. Why do people living in the country, especially in isolated districts, provide for the winter by storing large supplies in the cellar? Why do not people in cities follow the same plan? What are the difficulties of such a plan as a method of providing for old age?

4. What are the disadvantages of hoarding money?

5. Would buying Government bonds be one way of saving money? What is a Government bond? What can you learn of any other institutions besides banks that will receive money and pay it back in the future?

6. In an encyclopedia look up "insurance." In what ways do insurance companies aid in providing for the future?

7. When the United States Government needs money for supplies, it borrows very largely from the savings of the people. Show how this is likely to affect the business of the country both favorably and unfavorably



## SOME FUNCTIONS WHICH MONEY PERFORMS FOR THE BUSINESS MAN.

In his family life the business man uses money just as other members of his family do to buy the things he wants to consume. In his business dealings he needs money for purposes which are different from those which belong to the family. The simplest way of putting the matter is to say that in business money is used to secure the things with which more money is made. In using money to carry on business the first step is to purchase producers' goods. A farmer, for instance, who is a business man quite as much as a merchant or a manufacturer, uses money to buy or rent his land. With money he stocks his farm with horses, cattle, swine, and sheep, and hires men to work for him. The farmer exchanges money for implements and with it he buys seed for planting his crops.

The merchant is another sort of business man who uses money in the purchase of producers' goods. The merchant uses money to rent a store and fill its shelves with merchandise. He employs clerks, buys advertising space in periodicals, and pays the bills that are sent him for lighting and heating his place of business.

## THE PECUNIARY UNIT.

Money would not serve all of these purposes with such ease and readiness if it were not for the fact that a unit of money has been established in which we can count and calculate. The unit established by the National Government of our country is the

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1. The pioneer farmer had little use for money; he made his producers' goods—his tools, his house, his well—by the work of his own hands. What producers' goods would it be very difficult for the pioneer farmer to make for himself? It would be better for him if he could sell what? Buy what?

2. Would the merchant not be as well off if there were no money? Could he not as well hire clerks and pay his bills in merchandise?

3. Money gives its possessor power to command productive forces. Is this statement true of the manufacturer? How can we be sure the possessor of money will command productive forces in a way that will be useful to society?

4. When the United States Government obtains money in time of war, for what purposes will it command productive forces? In what ways can the Government get control of money?

5. There are certain radicals in this and other countries who say that they want to do away with all capital. Do they understand the meaning of the word "capital" when they talk in this way?



dollar. Twenty-three and twenty-two hundredths grains of gold are declared by the Government to be a dollar. All the money made in the United States is in proportions of the dollar unit. A ten-dollar gold piece contains ten times this amount of gold; a five-dollar gold piece contains five times this much. A dollar bill is worth this amount of gold; a silver half-dollar half as much; quarters, dimes, nickels, and cents are each definite proportions of the pecuniary unit.

Although the Federal Government is not the owner of the money of the country, it is the only manufacturer of money. Since the Central Government is the only maker of money, it is but natural that people everywhere should have absolute confidence in the quality and weight of coins that come into their hands. The bills, silver money, nickels, and "coppers" that are issued because of the inconvenience of carrying gold in very large or very small amounts can be exchanged for gold and are, therefore, accepted quite as readily as the gold which they represent in amount.

#### THE USE OF THE UNIT IN FAMILY CALCULATIONS.

It is important that we understand how the establishment of a money unit makes all kinds of exchange definite and easy. The family finds the unit of money a great aid as a guide in deciding the number of things it can purchase at certain prices. If the family income is \$100 a month and the family is spending \$25 for rent, not more than \$75 can be spent for food, clothing, light, heat, and miscellaneous expenses. If the income is reduced to \$90 a

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1. What difference would it make if our small coins were not in proportions of the dollar? What is the monetary unit of England? Of France? Of Germany? Of Russia? Of Japan?

2. Can we compare the value of our unit with those of foreign countries? How many dollars in an English "pound"? Compare the value of the dollar with the value of the monetary units of the countries mentioned in the preceding question.

3. The statements with regard to the value of foreign coins in the United States vary from time to time with what are known as changes in international exchange. Why should the different coins of the different countries have different relative values at different times?

4. A Russian ruble is not worth as much in this country as it was before the war. Can you see any reason why this should be so?

5. What is a budget? Find out what you can about the budget of some business firm. What are the advantages of a family budget?

6. What is a business inventory? Why is it taken at definite times in the year? What is meant by a fiscal year in business?

month and the family wishes to spend as much for food, clothing, light, and heat, it is easy to calculate that a cheaper place must be found in which to live or less money must be used for miscellaneous goods. Thus, by computing its expenses and its income in dollar terms—sometimes this is called making a budget—the family is able to organize or adjust its expenses to fit its income.

The dollar unit helps the family choose what to buy from among the many goods offered it. Suppose the family is deciding whether to buy a new piano or a new rug. The family wants both very much, but finds it hard to decide which it wants the more. As soon as it learns, however, that the piano will cost more than the rug, it begins to think of all the additional things that can be bought if the rug is chosen. When all these things in addition to the rug are weighed against the price of the piano it is easier to choose. Thus the dollar unit is a sort of measuring stick with which we can measure our wants, compare one with another, and decide on a course of action.

The family also counts in dollar units the amount of money it should save for a rainy day. Knowing how many dollars will be required to secure a home and buy food and clothing, it is easy to determine how many dollars should be saved. Thus the family can determine just what part of each day's or year's income it is desirable to save. A man can calculate in dollar units just how many days' work will buy a home and give him an income in his advanced years. In all these ways the family thinks in terms of dollar units when spending its income. It would be hard indeed for the family to plan and organize its expenditures and savings if it had no unit in which calculations could be made.

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1. What is the monetary unit in the United States? What part of a pound is a grain? What part of a pound of gold is required to make a dollar?

2. In what ways does the pecuniary unit serve the family? Does a student ever calculate in terms of the pecuniary unit? If there were no established unit and the family received its monthly income in a lump of gold, paying for goods by the grain, would they be using a monetary unit?

3. Without a unit in which to calculate, our expenditures would be planless and unreasonable. Is this statement true? Why?

4. If everyone in the United States eats less wheat bread and more corn bread, how will the prices for these be affected? The United States Government has guaranteed the farmer \$2 for wheat raised in 1918. The purpose of this is to make sure that the farmers would attempt to raise large crops. Why is this likely to be true?

## MONEY UNIT IN BUSINESS CALCULATIONS.

Business men also find the pecuniary unit indispensable in making their plans. A farmer, for instance, is deciding whether he will raise corn or wheat on a certain field. He knows that he can raise at the same cost about 60 bushels of corn on each acre of the field or about 25 bushels of wheat. Will he decide to raise corn because he can raise more bushels of that? No, he will calculate the number of dollars for which each crop can be sold and let that be his guide. If corn sells for \$1 a bushel and wheat for \$3 a bushel, it will be more profitable to raise wheat, even though the number of bushels raised is far less. Thus, calculating in terms of the unit of money is the method the farmer uses in deciding what crops to produce.

A merchant also in deciding what goods to put in his store thinks in terms of dollars. It may be that a certain merchant believes he can sell 100 hats every week and that he can sell only 50 pairs of shoes in the same length of time. But if the profit on shoes is three times as great as that on hats, and he has no room to handle both articles, he will decide to sell only shoes.

A manufacturer finds the pecuniary unit a great help in making many calculations concerning his business. One of the decisions which a manufacturer is constantly called on to make is whether he shall hire men or buy machines to do certain kinds of work. A certain manufacturer was making shoes, the leather for which could be cut out either by men or by machinery. His problem

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1. In figuring his profit, what are the principal things which a merchant must put down as costs? As receipts? Will a merchant sell the goods that bring the highest price or the greatest profit?

2. Explain, as to one who knows nothing about it, how a merchant determines what goods to put on his shelves. Explain how a manufacturer determines what process will be cheapest.

3. Without cost accounting, production is mostly guesswork. What does this statement mean? Is there any truth in it? What difference does it make to the community whether a manufacturer of clothes has a good cost system?

4. Producers guide their output by the demand of consumers expressed in dollar terms. Explain. What methods might be used to guide producers if we had no monetary unit?

5. If a government passes laws with regard to minimum wages to be paid to workers, what are some of the problems that should be fully investigated before these laws are enacted? What dangers attend the enactment of such laws without preliminary investigations?

was to find out which was the better method. The machine would work faster but would cost a great deal of money. The manufacturer learned, however, that such a machine would cut the leather for a million shoes before wearing out. The cost of the machine was \$1,000. When he compared this with the number of dollars that it would take to have leather for a million shoes cut out by hand, he found it easy to reach a decision. In such ways manufacturers are continually using our unit of money as a measure with which they can plan the least expensive methods of producing goods.

#### MONEY THE UNIT OF WAGES.

A laborer who is seeking work makes use of the dollar unit in much the same way as the farmer, the merchant, and the manufacturer. If he has two jobs offered him, one no more difficult or distasteful than the other, he is almost sure to accept the work which gives him the greater number of dollars.

There is tremendous value to all of us in the fact that all of these business men who are working to provide the things we want do their reckoning in dollar terms. Such reckoning makes our goods cheaper and makes it more certain that the things we want most will be produced.

#### PRICE AS A GUIDE TO PRODUCTION.

Our unit of money is very important in getting farmers to raise wheat and other grains in proportion to our wants. By

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1. Make a list of the qualities desirable in the standard money of a country. Skins, cattle, tobacco, sea shells, slaves, wampum, olive oil, corn, stones, and dried fish have all been used as money. Point out disadvantages in each of these as money.

2. What is standard money in the United States? Why is it desirable to give the Government sole authority to manufacture money? In medieval times in Europe many lords coined money. This made it necessary that money should be weighed and tested whenever an exchange was made. Why?

3. Why is it desirable to stamp a device on coins? Why mill the edges of coins?

4. The coinage of money and the prevention of counterfeiting are made duties of the National Government by an explicit provision in the Constitution. Why should these duties be laid upon the National Government rather than upon the State governments or local communities?

expressing our wants for wheat and corn flour in dollar terms we are putting them in a sort of language. Every farmer can tell by the number of dollars a bushel that are offered just how strongly people are demanding wheat, corn, and other grain. Thus the grains that we are demanding most loudly in our language of dollars will be the ones that the farmer will be most certain to raise. Merchants, also, guide their actions by what we say in our language of prices. If we are offering prices that will give merchants a profit on any article, they will try to provide us with it. In this way the people who are producing goods have a guide; they do not act merely by guess, but can make their efforts fit intelligently into our demands. When the laborer takes the job that pays the highest wage, he is usually going into the work we are most anxious to have done. Our demand for certain goods causes us to offer high prices to manufacturers who will make them. The manufacturer in turn can afford to offer high wages to the laborers who will help him make these goods. Thus workers are drawn into those industries in which we are most anxious to have them.

#### MODERN SOCIETY AND THE MONEY SYSTEM.

These uses of money and money units make it plain why modern society is called a money society. One writer, thinking of the way in which families plan their expenditures in terms of dollars, has said, "The unit of money permits the organization of consumption." Again, noticing how business men and workmen plan and guide their work by calculating in dollar terms, this writer says of our unit, "It permits the organization of production." Then, thinking of the way in which business men try to furnish the goods which we demand most strongly in our language of dollars, he says that the use of a monetary unit "articulates productive and consumptive activities into an organic system."

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## Chapter VII.

### CONCENTRATION OF POPULATION, INDUSTRIES, AND INSTITUTIONS.

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Lesson A-24 calls attention to the fact, characteristic of modern life, that great numbers of people have come together in relatively small areas because of the possibility of carrying on industries more economically in the midst of a concentrated population. Consequences of the highest importance for community life have thus developed.

The most conspicuous instance of industrial integration which has taken place in this country is the subject of Lesson A-25. The history of this great corporation is typical of the tendencies of the time, and it shows how in the process of growth such concerns undertake many kinds of activity which are wholly different from the primary purpose of the corporation but accessory to it.

Lesson A-26 deals with concentration in that industry in which the tendency to consolidation first appeared and in which it has recently been carried to the extreme limit through nationalization, namely, the railroads. It would not have been possible, perhaps, to bring all the railroads of this country under a single effective control during the Civil War, although they were then of far less importance and extent than now. The way was prepared for nationalization during the present war by such steps in concentration as those described in the lesson. So thoroughly standardized had the roads become and so closely allied were they in operation and management that the step to complete centralization was effected with ease that was surprising in view of the magnitude of the undertaking.

Lesson A-27 shows that the advantages of concentration are not confined to industry alone. The principle of the larger unit is effectively applied in social institutions as well. The consolidation of small schools has been in progress throughout the United States for a number of years. Churches of the same denomination have combined with greater ease because of better facilities for transportation; the general spirit of consolidation has even brought together congregations of different denominations, and good results have followed. Universities, professional schools, libraries, fraternal orders, and many other kinds of social institutions show the influence of the same tendency.

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#### LESSON A-24. CONCENTRATION OF POPULATION IN GREAT CITIES.

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Not long ago a noted writer made this statement: "Our forefathers at the time of the Revolutionary War were a nation of farmers." His statement was almost literally true. In 1790, only a few years after the Revolution, our country took its first census, gathering information of every sort about the people who lived in the United States. The census reports of that period show that 29 persons out of every 30 lived on farms or in very small towns. Even in 1800 there were only five cities in the United States in which more than 10,000 people lived. Out of every 100 people, 96 still lived in the smaller cities or on farms.



## GROWTH OF CITIES.

In the 110 years that followed, great changes took place. By 1910, 603 cities, containing 37 per cent of our population, had passed the 10,000 mark. There were 50 large cities of more than 100,000 each, and nearly a quarter of all the people in the country lived in these large cities. During the 10 years between 1900 and 1910 the urban, or city, population increased six times as fast as the country population.

The facts concerning the growth of cities are even more striking when we notice that a very large proportion of our large cities are in one part of the country. Over two-thirds of all American city dwellers live in the quarter of the United States that lies east of the Mississippi and north of the Ohio River. More than this, in certain parts of this area almost everyone lives in cities. In Rhode Island 96 per cent of the population is urban; in Massachusetts, 92.8 per cent; in Connecticut, 89.7 per cent; and in New York, 78.8 per cent. At certain points, as in New York City and Chicago, the concentration of people has taken place so rapidly as to be almost unbelievable. In 1800 New York was a bustling little city of 62,000. By 1910 nearly 5,000,000 people had gathered there. In 1800 there was no Chicago. In 1832 a tiny settlement of 250 people had collected near a fort that had been built on the Chicago River. In 1910 the census showed that nearly two and a quarter million persons lived in the small area called Chicago.

## THE CONCENTRATION MOVEMENT NOT LIMITED TO THE UNITED STATES.

The movement of people into concentrated groups has been progressing during the past century almost, if not quite, as rapidly

1. Make some form of graph which will show the per cent of population of the United States now in cities. For example, let 1 inch along a straight line represent 20 per cent. Make some form of graph which will show the per cent of population living in cities in 1800.

2. Make a graph showing the per cent of population living in cities in Rhode Island, Massachusetts, Connecticut, New York, and New Jersey. Make graphs which will contrast the number of people living in Paris, London, Berlin, Vienna, and Chicago in 1800 with the numbers living in these cities now. For instance, use one-eighth inch along a straight line to represent 100,000 people.

3. "When people lived largely from the work which they did in agriculture, there was little need of large cities." Is this statement true? Why?



in some other countries as in the United States. We can perhaps see this best by noting the growth of certain cities in Europe. In 1800 less than 1,000,000 people lived in London. In 1910 seven and a quarter million persons made greater London the largest city in the world. During the same period of 110 years Paris grew from about a half million to nearly three million; Vienna changed from a city of less than a quarter million to one of two million, and Berlin increased in size more than fivefold, to a total of over 2,000,000 persons. No such growth of cities had been known before in the history of the world. Population is no longer evenly distributed over the country, but is concentrated in certain sections and at certain locations. What caused such a change? What new problems does the change bring? Answers to these questions will throw a flood of light on what is meant in modern times by the term "community."

#### POPULATION GRAVITATES TO THE PLACES WHERE IT IS EASIEST TO LIVE.

No single cause can be given which fully explains why the nineteenth century saw such a great movement into closely packed communities. We get a complete answer only by studying many changes which occurred before and during that time. Noticing certain facts, however, will give us much help in understanding what happened.

People have always moved to those locations where they believed they could best and most easily satisfy their wants. When men's wants were mostly for food, simple dress, and shelter, hunting and agriculture were the important occupations. Then people congregated in the regions best adapted to producing food. The most fertile lands were the most thickly settled. Everyone

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1. "The colonial cities in America were essentially commercial cities. They were the markets where the country's raw products were exchanged for the manufactured wares of England." Why should exchange of goods cause a city to grow? What were some of the products which the Colonies exchanged with England?

2. Why did not the Colonies manufacture goods which they wanted, instead of having them brought across the Atlantic?

3. "The discoveries and explorations of Columbus and other navigators had much to do with the growth of cities which followed 400 years later." Can you see any relation between the explorations and city growth?

4. What are some of the economic and geographic reasons for the location of Pittsburgh, Chicago, Buffalo, Kansas City, Milwaukee, Minneapolis, San Francisco, and New York?

knows how the western tribes of American Indians moved over the prairie seeking the location where game was most plentiful. Most of us have read how in Europe many hundreds of years ago there were great migrations of people from one district to another seeking better lands. Often, of course, these migrating peoples found it necessary to fight to the death with other tribes for the possession of fertile sections.

As we have seen in earlier studies, great changes came. New wants developed. Discoveries and explorations helped people to see that there were parts of the earth in which many goods could be produced much more easily than in their home countries. Some parts have natural gifts that make them the places where certain kinds of work can be done best. Steamships, railroads, the telegraph, and machinery of many sorts made it easy to rely on these new parts of the earth for certain products. More and more one part of the world became dependent on the other. More and more the broad, fertile prairies of the United States, Argentina, Canada, Australia, Roumania, and Russia are relied upon to feed the world; and locations favored in other ways have been utilized for other special purposes.

#### SPECIAL MOTIVES FOR CONCENTRATION.

There are many places in the United States where the materials or power for manufacturing have brought a concentration of people. Fall River, Lowell, Manchester, and Waterbury, in New England, all had their locations determined by the availability of water power, which attracted industries, and the industries in turn attracted workers. Water power and proximity to the great grain fields made Minneapolis the location of the world's greatest flour mills, and about this industry has grown a city.

1. Why must the people of a manufacturing city depend on means of transportation?
2. What is meant by speaking of New York as a commercial city and a financial center?
3. It is often said that cities tend to grow at a "break in transportation." Can you explain the meaning of this statement?
4. The United States Steel Co. erected an immense plant at Gary, Ind., where there was before nothing but barren sand dunes. Make a list of the tradesmen, manufacturing plants, business men, and professional men who would be likely to flock to such a location.
5. In order to maintain a city population it is necessary to concentrate food supplies at some point within the city. Make an estimate of the amounts of material of various sorts needed by some of our great cities, and estimate the storage capacities necessary to meet these wants.

The coal mines and ore fields of eastern Pennsylvania explain the congestion of population in the Bethlehem steel district. Later, when ore was brought from the mines at the head of Lake Superior, the iron and steel industry moved across the Appalachians and drew people first to the Johnstown-Pittsburgh district. Still later, ore and coal and coke were joined farther west, and drew population to the regions of Buffalo, Detroit, Gary, and Chicago. Birmingham, Ala., is the latest great center of population growing around a coal and iron producing district.

The packing industry, going west to the farms and cattle ranges, centered at Chicago and later expanded to Kansas City, Omaha, and other western cities, drawing with it a great army of workers. In the same way the brewing industry, locating largely in Milwaukee, Chicago, Cincinnati, St. Louis, and St. Paul, has gone to the source of raw materials in the grain fields and has been followed by a movement of population.

#### COMMERCIAL FEATURES OF INDUSTRIAL CITIES.

We should be quite wrong to have the idea that a congestion of population has taken place at every location where the raw materials of manufacture have been provided by nature. The people of a manufacturing city are specialists, and they must be able to sell or exchange what they produce for the other goods they want. Therefore, the greatest centers of population are likely to be found where materials of manufacture and transportation facilities are both to be found. All of the populous districts of the East owe much of their growth to the fact that they are near the seaboard and have either good water or rail transportation to the ocean.

#### COMMERCIAL CITIES.

Some locations are such that they are the natural points at which the products of many other localities are assembled for

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1. To a certain town where a steel plant was the chief industry was moved a cloth mill which could employ women. The owner stated that he expected to find a labor supply at this place. Explain why he might be able to do so.

2. Early in the nineteenth century England passed a law forbidding migration to London. Can you see any reason why a law against the increase of population in a city would prove ineffective?

3. One of the great needs of all large cities is a transportation system which makes it possible for people to live in suburbs. What problem of city life does such a transportation system aid in solving?

4. In the middle of the last century England passed a "cheap train" act which made it possible for the workers to go 22 miles for 4 cents. What city problem did this remedy?

distribution. St. Louis has such a location. Railroads and river transportation bring manufactured products from the East. To the west lies a vast farming country, in which almost no manufacturing is done. This situation has placed St. Louis in the front rank of cities distributing hardware supplies. Some locations are such that they are the natural receiving and distributing points for the trade of continents. Such a location accounts, of course, for the tremendous concentration of people at New York. New York is a great manufacturing city, but it is even more a commercial city. Here come the goods of Europe to be sold in America, and here come the goods of America to be sold abroad. When we think of the task involved in making the transfer of goods to and from shipboard and railroad at this great "break in transportation," we can understand why so many people have found this city a profitable place in which to live. Because of their locations such cities as New York, Boston, San Francisco, and New Orleans become in a sense middlemen in the trade of continents.

#### COMMERCIAL CITIES BECOME FINANCIAL CENTERS.

In these commercial cities are arranged the bargains and terms upon which international trade is conducted. Payments for imports and exports are made there and the men and institutions that deal in foreign exchange, as the making of these payments is called, congregate in these cities. Thus they become financial centers as well as industrial and commercial cities.

#### A LOCATION MAY COMBINE ALL ADVANTAGES.

Sometimes a location may combine all the qualities needed to draw population. Chicago has such a situation. Farms, cattle

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1. City government has had to take over many duties. It tells us where and how we may construct buildings; it frequently supplies water; it furnishes protection against fire; and disposes of sewage and garbage. Why do city dwellers carry on these activities at public expense instead of having each individual perform them for himself?

2. "A modern city is like a vast household. A city is an experiment in municipal housekeeping." Do you think this statement is true? Is it strange that we have not yet learned to keep house on so large a scale?

3. The right to operate street cars, a gas company, or waterworks in a city, is often very profitable. To secure this right there is a strong temptation to bribe city officials. Does this cause of corrupt politics exist in the country or in small towns? Do you think it in part accounts for dishonesty in city politics?

ranges, and materials for manufacture are all in reach. The world's greatest inland waterway and railroad systems furnish opportunity to transport the goods made there. At the same time Chicago is a distributing center for the food products of the West and the manufactured goods of the East.

#### THE WORKERS IN THE BASIC INDUSTRIES MUST BE PROVIDED FOR.

We know quite well that the workers in the great basic industries and the persons who import and export goods are not the only people who concentrate and thus form a city. The workers must be fed, clothed, housed, and provided with the thousand and one things they demand. To perform this work a second army of workers is called to the spot where an industry has located or from which goods are distributed. New industries come to make what is demanded; stores and markets appear to supply what can not well be made there. The great distributive system which furnishes merely food to a large city requires in itself enough people to make a city. Banks and bankers are needed; entertainment is desired; means of transportation must be provided; physicians are a necessity; teachers, lawyers, and ministers are wanted. Thus an area of concentrated population adds to itself.

#### SATELLITE CITIES.

About every large industry others spring up which supply it with some of its materials or use its products in further manufacture. In all of the districts where steel is manufactured, it furnishes the raw material for a score of other industries. Wire, pipe, fencing, nails, shop machinery, and agricultural implements are all dependent upon steel manufacture, and plants making these have prospered in the iron and steel districts. The labor supply that is already there often brings new factories to factory

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1. In a number of cities commissions have been organized in recent times to plan for better distribution of the streets and more beautiful buildings and parks. These are sometimes called commissions on the city beautiful. Show why it is difficult to direct the growth of a city from the outside so as to satisfy the type of demand expressed in the organization of such commissions.

2. Describe the methods that are employed in a city for designating the location of buildings. Show why these methods have grown increasingly systematic with the development of larger cities.

3. Great cities have found it necessary to develop underground transportation for their inhabitants. What are the advantages of an underground system for passengers and for the city in general?

towns. Very often, however, the industries that follow in the train of the larger one locate far enough away to secure cheaper rent or less taxation than is charged in the large city. As a result of these new industries new cities grow—satellites of the larger center of population.

#### SOME CONSEQUENCES OF THE CONCENTRATION OF POPULATION.

The concentration of great numbers of people in certain localities has been very fruitful in producing goods, but it has brought serious problems. These problems are emphasized because cities have grown so rapidly that people have not learned how to live in and manage so large an organization as a city. One of the most serious problems in a city is procuring and distributing food and other necessities. City dwellers can not buy food from the producers. The city is naturally a market to which all kinds of supplies are sent, but how to care for these supplies and how to distribute them most cheaply are new questions which came with cities. How to procure pure water, lights that do not bring danger of fire, sidewalks, passable streets, open spaces for play, and rapid transportation systems are all problems which the city must solve. The difficulty of housing many people all of whom wish to live near their work has given cities a problem which they have not yet solved. The desire to live near one location has resulted in overcrowding, which has brought sickness, vice, and crime.

The work of caring for a city has proved difficult for the city governments that we have thus far organized. Not only are the duties many and new, but sometimes dishonesty and corruption have been added to ignorance and difficulty.

Concentration of population has come as a natural part of our present system of satisfying wants. It is likely to increase so long as various parts of the world are interdependent. It has brought us, however, many new and difficult problems upon the solution of which we have made only a beginning.

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## LESSON A-25. THE INTEGRATION OF THE GREATEST MANUFACTURING CONCERN IN THE UNITED STATES.<sup>1</sup>

In the year 1858 one Andrew Kloman and his brother started a small iron forge at Allegheny, Pa. Their plant was worth about \$5,000. They made a reputation for putting out good and reliable products, particularly axles for railroads, and the business prospered. When more capital was needed the following year, Henry Phipps contributed \$1,600, and became a partner under the new firm name of Kloman & Phipps. During the Civil War the demand for iron was enormously increased and the iron and steel industry grew rapidly and was very prosperous. Late in 1861 Kloman & Phipps obtained more capital and built a new mill. In 1863, partly to settle a dispute between the partners, Andrew Carnegie took an interest in the business, and it became known as Carnegie, Phipps & Co. (Ltd.). In 1865 this partnership was consolidated with another in which Carnegie also had an interest, and took the name of the Union Iron Mills Co. About this time the property of the company was estimated as being worth between \$250,000 and \$300,000.

After the war it was a serious problem how the company was to find a market for its products, because the orders which had come as a result of the war ceased, and the use of iron for other purposes had not yet developed on a large scale. For a while profits were very low, but soon an increase in railroad and bridge building opened a new and rapidly expanding market for iron and steel.

### FIRST STEPS TOWARD INTEGRATION.

The Union Iron Mills consumed large quantities of pig iron, and the owners decided that they could obtain it at less cost if they made their own pig iron instead of buying it. In 1870 a group of them organized a separate company and erected the Lucy blast furnace to smelt ore and make pig iron. This furnace, erected on improved plans, was one of the most efficient in the country, having an output of 50 tons a day at the start.

### STEEL BECOMES CHEAPER AND MORE COMMON.

The next step in the development of the steel and iron industry came with the introduction of the new process of making steel

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<sup>1</sup> This lesson was prepared by Chester W. Wright, associate professor of political economy, University of Chicago. It presents the history of the United States Steel Corporation as a concrete example of the way in which an industrial concern reaches out and absorbs into itself many different kinds of activity. The concentration of capital and management into a single concern is typical of modern industrial organization.



known as the Bessemer process. It was this process which made cheap steel possible. In 1874 a number of the men connected with the Union Iron Mills and some others who were interested in railroads organized the Edgar Thomson Steel Co., and a very efficient big plant was erected for the manufacture of steel rails. At this time few railroads had steel rails; the cost was very high—\$106 a ton in 1870—and the total output of the country in that year was only 34,000 tons. But when it was found that steel rails lasted much longer, were safer, and made it possible to run much heavier trains, the railroads rapidly substituted them for the old iron rails, especially when the price began to fall, as it did at this time, reaching \$44 a ton in 1878 and eventually touching \$17 a ton in 1898. The usual price in recent years has been about \$28 a ton.

#### INTEGRATION BY EXTENSION OF THE PLANT.

The Thomson Co. had bought most of the pig iron it used from the company owning the Lucy furnace, but as the members of the former company did not all have a share in the ownership of the latter, a dispute arose over the price to be paid for the pig iron, and as a result the Thomson Co. decided that it would also make its own pig iron.

The enlargement of a business for the purpose of controlling its own sources of supply illustrates an important fact in business organization. Every owner of a factory tries to bring into his

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1. At what period in the history of the United States did the coal and iron industries begin to be of importance?

2. Find out about the earlier and relatively unimportant iron industries of the New England colonies.

3. What was the reason for the original settlement around Pittsburgh?

4. Trace the history of the development of the Pittsburgh region and indicate the relations of this development to the steel and iron industry.

5. The coal regions in northern France and the iron mines in the two provinces which Germany took from France after the Franco-Prussian War have sometimes been described as major causes of the present war. How extensive are these deposits and what is the justification for the statement that they have played an important part in the war?

6. What mineral industries played an important part in the development of commerce with the British Islands in the period of ancient history?

7. Give some other examples of the influence of mining industries on the populating and developing of countries.

8. Are there other examples, in history, of wars which have been carried on for the possession of natural sources of wealth?

control as much as he can of the industries on which his factory depends. The owners of a corn-canning factory often buy up the land on which the corn is raised. A railroad often owns the mines from which the coal comes which is burned in the engines. The steel plant reaches out and absorbs the pig-iron furnace, the iron mine, the railroad, and the coal mine. This bringing together of all the branches of an industry is called integration of industry. The example which is to be fully described in this lesson is one of the most striking examples of integration on a tremendous scale.

#### INTEGRATION BY COMBINATION AND PURCHASE.

Another step toward integration and the further harmonizing of interests was taken in 1881 when the Thomson steel works, the Lucy furnaces, the Union Iron Mills, and some coke properties, together with \$1,000,000 new capital, were all combined into one firm with a capital of \$5,000,000. Mr. Carnegie, who had on various previous occasions acquired the interests of some of his partners in these concerns, owned a little more than half of the stock of this company and it was known as Carnegie Bros. & Co. (Ltd.).

A further important move toward integration was made the following year when the Carnegie interests purchased a large amount of stock in the Frick Coke Co., which was the dominant owner of coal lands and coke ovens in the Connellsville district, whence came the best coking coal used in smelting iron ore.

#### ABSORBING COMPETITORS.

In 1881 some competitors of the Carnegie Co. opened a big plant at Homestead for the manufacture of steel ingots, billets,

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1. Integration is said to take place when a company expands backward to the manufacture of its raw materials, or forward to the manufacture of more highly finished products or to the retailing of its products, or sidewise to the manufacture of by-products or to closely related industries. Can you give an example of each in some line of business other than the steel industry?

2. Is there integration in the oil-refining business?
3. Describe the integration in the meat-packing business.
4. Why do some shoe manufacturers have their own retail stores?
5. In what ways may a manufacturer gain by owning his raw material?
6. Can you mention some economies which might be obtained if a manufacturer of crude steel also manufactured steel rails?
7. Are there any dangers to the community in the spread of the influence of a single industrial concern over all the related branches?

and rails, but they met with financial difficulties and two years later sold out to the Carnegie interests. Thus a rival was eliminated and a further step in integration was taken when the newly purchased works were turned into special mills for making a single kind of product. They were limited to the production of specialties such as bars, angles, beams, structural shapes, etc., such things as made possible the modern skyscraper, our great steel bridges and similar structures.

In 1890 another threatening rival was eliminated when the newly erected Duquesne steel works were purchased.

#### FURTHER EXTENSION OF PROPERTIES.

In 1892 the various Carnegie interests were again consolidated in the Carnegie Steel Co. (Ltd.), with a capital of \$25,000,000. At the same time several new movements toward integration were started. The Union Railroad was built connecting the various plants about Pittsburgh and giving easy access to the railroads running out of the city. Then an old broken-down railroad connecting Pittsburgh and Conneaut Harbor on Lake Erie was purchased and practically rebuilt, while ore docks were erected with marvelously efficient machinery for transferring the ore from the boats to the railroad. To complete the ownership of the chain of transportation facilities, the Carnegie Co. now organized another company to build a fleet of ore boats to operate on the Great Lakes. Meanwhile, a half interest in the Oliver Mining Co. with extensive holdings of ore in the Lake Superior ore fields had been purchased, and these ore holdings were later considerably increased. When this series of moves had been completed it placed

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1. The invention of a new industrial method frequently is the source of great profit to the inventor and also to the community. What does the Government do to stimulate invention and protect the right of the inventor?

2. What is the method of protecting the rights of an author to the books or articles which he writes?

3. The protection furnished by the Government in these cases terminates after a period of time. Justify this time limit.

4. Industrial plants commonly maintain laboratories. Explain why this is a legitimate part of the business.

5. What is the Bessemer process?

6. What are the properties of steel as distinguished from the properties of iron?

7. Could modern industrial machinery be made of iron?

8. Are there any forms of machinery which require iron rather than steel?

the Carnegie Co. in an absolutely independent position for obtaining its raw material, for it controlled practically every step from the mining of the ore near Lake Superior to the turning out of the finished rail at Pittsburgh. Integration had gone the full length of attaching to the rail mills the whole chain of industries necessary to give these mills materials and make them profitable.

In 1900, in order to adjust a dispute between the Carnegie Steel Co. and the Frick Coke Co. as to the price the former was to pay the latter for coke, the two concerns were combined in a single corporation called the Carnegie Co., capitalized at \$320,000,000, of which \$250,000,000 represented the estimated value of the Carnegie Steel Co., to such size had its properties and business grown. It was then recognized as the most efficient and largest concern in the industry. Such was its history up to the time it entered the Steel Corporation.

#### GROWTH OF THE INDUSTRY.

To understand the situation which led to the organization of the United States Steel Corporation in 1901, it is necessary to go back a little and see what was taking place in the iron and steel industry as a whole outside the Carnegie concerns. The growth of this industry after 1860 had been phenomenal. In that year the total pig-iron output of the country had been 821,000 tons, while in 1900 it had reached 13,789,000 tons. The output of

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1. Was coal always used in making iron? What advantages does it have over wood for that purpose?
  2. What different kinds of rails were used when railroads were first built in this country?
  3. What are some of the effects produced on other commodities by the reduction in the price of steel?
  4. What are some of the effects produced on wages by the reduction in the price of steel?
  5. It is sometimes said that machinery has come to be the chief competitor of the laborer. Discuss this statement and show its relation to the development of the steel industry.
  6. Reviewing earlier lessons, illustrate what is meant by the statement that the various steel companies increased their capital.
  7. Mr. Carnegie grew enormously rich by organizing these different companies. What justification was there for his coming into possession of so large a share of the company's earnings?
  8. Mr. Carnegie often said that his contribution to the company was the selection of men who could do the work. Ought he to be liberally paid for good judgment?

steel had been very small in 1860, but had risen to over 10,000,000 tons in 1900. The opening up of the great ore mines, the presence of abundant supplies of coal, combined with the introduction of labor-saving machinery under the direction of American organizing ability, had made this country in a few decades the leading manufacturer of iron and steel in the world.

#### REASONS FOR SEVERE COMPETITION.

During this period of rapid expansion various individual concerns were going through much the same sort of growth as that which has been described in this lesson for the Carnegie companies. As the size of the concerns engaged in the manufacture of the cruder forms of steel increased, the number of such concerns decreased through integration until finally a dozen of the largest were manufacturing more than half of the output of the whole country. Such a situation leads to very intense competition, especially in an industry like the steel industry which requires a great deal of machinery and organization. The rivalry between these large concerns was especially bitter because the iron and steel industry is peculiarly liable to great fluctuations in the demand for its products. Iron and steel are used so extensively and in so many lines of industry that when the country enters a period of prosperity an enormous demand for steel arises. It takes so many millions of dollars and so long a time to build an efficient steel plant that the output of steel can not be greatly and quickly

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1. Competition is regarded by many students of industrial life as essential to the development of industry. Point out some of the advantages and some of the disadvantages of competition.

2. Should there be in the interests of a city competing telephone companies and competing gas companies?

3. Does the answer which you gave to the question regarding telephone companies apply equally to grocery stores and drug stores?

4. What are the advantages of the department store over a series of specialized stores?

5. It has been stated that the war conditions have driven small bakers and other small handlers of food commodities out of business. How could this come about?

6. The franchise of a railroad ordinarily does not permit this road to carry on other forms of business except in immediate relation to transportation. Why should a franchise limit the number of different activities which a company can take up?

7. Point out the geographical reasons which make it advantageous for the Pittsburgh region to put itself into contact with the Great Lakes.

increased to meet such a demand. Consequently, prices rise rapidly and the profits are very high. Then when a period of depression sets in, the demand falls off even more quickly than it rose. During such a period of depression the people who have millions of dollars locked up in these big plants do not want to shut down the mills if they can possibly help it, since this would leave their capital idle and would scatter their workmen so that they could not easily be gathered together again. Rather than shut down, the mills cut prices to a very low point, sometimes even below cost, in the hope that they can earn a little interest on their capital or at least avoid the greater losses which a shut-down would entail. Under such conditions cut-throat competition sets in and only the stronger concerns can survive. This explains the meaning of the statement which has been made that the steel industry is either a prince or a pauper.

#### THE FORMATION OF A POOL.

It is partly because of the heavy losses which competition causes and partly because of the desire to secure control of the whole industry so as to control prices, that manufacturers in every line try to work out combinations. Combinations in the steel industry have been made on a large scale. At first these combinations took the form that is known as a pool—that is, a number of independent concerns get together and agree to limit their competition in one or more ways. They may decide to divide the orders

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1. Describe in detail the various reasons why it is difficult to increase suddenly the output of steel.
  2. What difficulties is the Government confronted with to-day in its efforts to procure the necessary supplies of steel?
  3. How is the Government trying to meet these difficulties?
  4. Explain in detail some of the conditions which cause a big falling off in the demand for steel in a period of industrial depression.
  5. Carefully explain the conditions which sometimes lead a manufacturer to sell his product at less than cost.
  6. In what ways do you think that great fluctuations in prices may be harmful to industry?
  7. Under existing conditions, is it desirable for the Government to prevent fluctuations in prices by setting prices on staple commodities? Discuss this question so as to bring out the advantages and disadvantages of governmental price control.
  8. The Government has for a long time controlled the rates charged by railroads for transportation of freight. What has been the effect of this control on the railroads and on the interests of the country as a whole?



among themselves instead of fighting for them, or to fix prices, or to limit the total output so as to prevent overproduction, or to divide the territory from which orders are received or to do several of these things. The purpose is the same in all cases; by checking competition the pool prevents price cutting and controls the industry. But each concern is left free in all other ways, except those referred to in the pool, to run its business as it sees fit. The chief difficulties met with in the pool are the frequent disputes that arise between the members about real or apparent violations of the rules. In the late eighties and the middle nineties a number of such pools were organized by the various concerns manufacturing steel rails, steel billets, wire nails, etc., but in the hard times following the panic of 1893 the agreements were constantly breaking down or being secretly violated.

#### FORMING TRUSTS.

About 1898 it was evident that the hard times were over and a period of prosperity was ahead, which would mean good profits to the steel industry, provided competition was not too severe. To insure this result and avoid the dangers of breakdown which the pool form of organization involved, a number of combinations or trusts were formed in the three years 1898 to 1900 in various branches of the steel industry, such as tin plate, sheet steel; steel tubing, steel wire, steel hoops, and structural steel. These trusts differed from the pool in that they brought the concerns under the control of one corporation and prevented the difficulties which arose under the looser arrangements of the pool. In a trust the only danger arises from competition outside of each trust.

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1. One of the methods by which railroads used to break their agreements in pools was by giving rebates. What is a rebate and why is it objectionable?

2. Rebates were more commonly secured by large concerns than by small concerns. Why should this be the case?

3. Reviewing some of the earlier lessons, show why bankers are concerned in the larger organizations of industry as, for example, the steel industry.

4. Does the value of stock in a corporation parallel the changes in price of the commodity which the corporation produces? Especially bring out in answering this question the relation in time of fluctuations in stock and in prices.

5. What is meant by market quotations of prices on staple commodities, and where can one find what these quotations are?

6. How can a combination of capitalists force prices up and down?



## NEW DANGERS OF COMPETITION.

There were also organized during these years two concerns, the Federal Steel Co., backed by the great banking house of Morgan, and the National Steel Co., backed by the financial resources of Moore. Both of these steel companies were combinations of other companies and both were competitors of the Carnegie Steel Co. Seeing dangers of competition ahead, the Carnegie companies threatened to enlarge and carry the competition to the limit. This meant low prices and the loss of the big profits which prosperity seemed to promise. Moreover, the bankers and promoters who still held a large amount of stock in the new combinations were anxious to sell their stocks to the public and they knew that if a competitive war broke out in the steel business the value of these stocks would fall and the public would hesitate to buy. This furnished an added reason for trying to harmonize the conflicting interests.

## UNITED STATES STEEL CORPORATION.

It was under these circumstances that a meeting of the leading men in the steel industry was called, and in 1901 under the leadership of Mr. J. P. Morgan the plan to consolidate all of these concerns and small combinations in one gigantic company to be called the United States Steel Corporation, with a capitalization of

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1. In what ways, if any, do you think a big combination like the Steel Corporation might be of benefit to society?
  2. In what ways, if any, do you think it might be harmful?
  3. Find out when the Sherman antitrust law was enacted and what its provisions are.
  4. It is sometimes argued that great industries ought to be taken over by the Government. What would be the advantages or disadvantages of such a move in the case of the steel industry?
  5. It is proposed by the radical party in Russia that the management of all industrial plants be turned over to committees of workmen. Discuss this proposal.
  6. Many great business corporations have developed plans of profit sharing which are more advantageous to workers than management through a workmen's committee. Find out about some of these plans and discuss their operation.
  7. What lines of education should one follow if he wishes to prepare to enter upon a business career connected with a large corporation?
  8. It is said that a corporation furnishes less opportunity for the development of individual initiative than a small business does. Discuss this statement.

about \$1,400,000,000, was carried through. The Steel Corporation as then organized owned 149 steel works of various kinds, vast ore, coal, gas, and limestone properties, over 1,000 miles of railroad, and over 100 vessels on the Great Lakes. It at that time controlled about two-thirds of the country's total output of steel ingots, billets, rails, castings, nails, plates, structural shapes, and sheet steel, and about three-quarters of the output of wire rods and tin plate.

Since that time it has enormously increased in size, so that in 1916 it mined 33,000,000 tons of ore, made nearly 21,000,000 tons of steel ingots, employed over 250,000 people, and did a business valued at \$850,000,000. A portion of this growth has come by the purchase of other companies and a portion by building new plants, such as that at Gary, Ind.

#### METHODS OF REDUCING COMPETITION WITHOUT CONSOLIDATION.

The expansion of the larger rivals of the Steel Corporation has, however, gone steadily forward. They are to-day even greater than at the time the Steel Corporation was organized. The Steel Corporation controls about one-half of the country's total output. Still there has been no such cutthroat competition in the business as broke out at times before. The Steel Corporation has not sought to kill off its competitors by ruthless competition, but has tried to promote the stability of the industry. One method used was the series of Gary dinners, named after the president of the Steel Corporation, who invited representatives of the leading independent producers to dinner from time to time. On these occasions the conditions and future prospects of the industry were talked over and, apparently, some consensus of opinion obtained as to the proper prices for products. These dinners were abandoned in 1911, the year when the Government started a suit under the Federal antitrust laws to secure the dissolution of the corporation. As yet the Supreme Court has not handed down its opinion in this case, and the company still continues as one of the leading examples of integration and consolidation.

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LESSON A-26. CONCENTRATION OF CONTROL IN THE RAILROAD INDUSTRY.<sup>1</sup>

With the growth of great industrial corporations employing thousands of men and owning many different plants, the problem of centralized control has become one of great importance. If a big organization is to act promptly, one man or a few men must be able to give orders to all the branches, and there must not be too many people who have to be consulted before orders can be sent out. The business world has developed a number of methods of concentrating control in a few hands. Some of these methods can be illustrated by the following examples.

## CONSOLIDATING RAILROAD LINES.

It was the railroads that began it. Other businesses could not grow big until the railroads were ready to carry their goods far enough and at a cheap enough rate to reach millions of customers. The first railroads were short, and their tracks did not have the same gauge; so that the only way a car could make a "through run" over several lines was by having its wheels changed when the gauge changed. Seventy years ago a passenger had to travel on 11 railroads to get from Albany to Buffalo.

The organizing genius of Commodore Vanderbilt devised the new type of system which has rapidly been extended to every great industry. He organized one general company which took over all these roads and set them working together under a single management. The New York Central Co. which he organized has now two complete routes from New York to Chicago, with a third line part of the way and many branches to help bring traffic to the main line. These are all controlled by the descendants of Commodore Vanderbilt and the influence of this first combination is seen in the fact that the same people have a share in the management of roads running west of the Rocky Mountains. This plan of combination, moreover, has been imitated by railroad after railroad until now the country has for the most part systems of railroads rather than single lines.

## HISTORY OF THE UNION PACIFIC.

A later example of combination of railroads on a large scale is to be found in the history of the Union Pacific under the manage-

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<sup>1</sup> This lesson was prepared by John M. Clark, associate professor of political economy, University of Chicago. It deals with a single aspect of business concentration, namely, the control of business by a few individuals. The complicated method by which this control is enlarged and kept in a few hands is traced in outline so that the reader may gain an impression of the ways in which capital is pooled in its control.

ment of Mr. E. H. Harriman. At the time that Mr. Harriman took charge of this road it was very much run down. It owned only 1,800 miles of road. It had lost most of its branches and was without funds for enlargement. Mr. Harriman saw the possibility of developing the business of the road. He got together the funds and when he had finished with the system it had over 23,000 miles, or nearly as much as all the railroads of France. Furthermore, it had an important voice in the control of 25,000 miles more. The whole system was developed in 10 years.

#### VOTING-TRUST METHOD OF CONTROL.

Such a development would never have been possible without the modern business methods of borrowing money and selling shares which were described in an earlier lesson. But the secret of Mr. Harriman's development of the system lay not in the fact that he secured the funds. He managed the funds so that they fitted into a single general plan. He secured the confidence of the shareholders so that they gave him their votes. Mr. Harriman controlled the system in this way, not by owning shares, but by devising methods of centralized control. Stockholders are often so anxious to make sure of keeping in power a management they can trust that they will hand over the voting power of their stock to a few men who act as trustees for them, so that even if the original holders sell some of their stock to strangers the votes will still be cast in stockholders' meetings by the same group of men as before. This is called a voting trust, and it is one way of concentrating control in business.

#### CONTROL THROUGH VOTING COMMON STOCK.

If a company has borrowed all it can, it can not expand any more without issuing stocks and making the men in control

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1. Reviewing earlier lessons, discuss the advantages and disadvantages of control of business by a single individual and by a group of individuals.
  2. Point out the methods by which in a large group of cooperating individuals one man may become responsible for the organization of the whole enterprise.
  3. Show why industries commonly grow up, as the railroad did, as small scattered undertakings.
  4. What is meant by the "standard gauge" of a railroad?
  5. What is meant by a standardized machine? What are some examples of very high degrees of standardization developed in modern industries?
  6. What are the leading railroad systems of the United States?

either put in more money or let in some new part owners. But they can still find ways to help keep control. A company can issue two kinds of stock, preferred stock and common stock. Since the preferred stock has first claim on earnings and is less risky, the common stockholders may make up for their extra risk by keeping for the common stock extra power of control. For example, they may arrange before they sell the preferred stock that the common stockholders shall vote separately and elect eight directors while the preferred stockholders elect seven. Then the men in control can keep their common stock and let outsiders buy the preferred stock and still elect enough directors to put in the president they want and dictate the policy of the company.

#### CONTROL BY THE HOLDING COMPANY.

Mr. Harriman used to employ a still more powerful device. When he wanted one more railroad, instead of buying the track, stations, engines, cars, and all the other property, or instead of buying with his own personal money the stock of the company that owned all this property, he simply had his company buy stock in the other company and so control the property he wanted. It was much cheaper than either of the other ways. Mr. Harriman's companies could often borrow the money to pay for the stocks, so that there did not need to be any new names on the list of the stockholders of his parent company. In 1906 this company—the Union Pacific—got enough income from its investments in other companies to pay the interest on its bonds and the dividends on its preferred stock even if it did not make a cent from its own freight and passengers.

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1. The transcontinental railroads received large subsidies from the National Government. What is the justification for such subsidies, and what effect do these subsidies have in leading to great combinations?

2. The business conditions which made it possible for a man like Mr. Harriman to control great wealth make it possible also for reckless speculators at times to secure control of great wealth which does not belong to them. Is this an argument against the concentration of control in the hands of a single individual?

3. Distinguish between a monopoly and concentration of control in the hands of a single manager.

4. What is likely to be the effect of combinations on the profits earned by business concerns? What, in turn, is the effect of such combinations on prices of commodities?

5. Are all businesses which are conducted on a large scale trusts or combinations?

It held the stock of the Oregon Short Line, and this line held the stocks of so many other companies that it came to be more of a holding company than a railroad company, although it owned a fair-sized road. A chain of companies like this can multiply enormously the power which wealth has to control other wealth in business. A dollar invested in a controlling interest in stock can control four dollars; and if these four are again invested in controlling interests and the money they control put into more controlling interests, it is hard to say where the growth will stop. It generally stops when the controlling group of men have taken in all the property they are competent to manage. Sometimes their property grows too big for them, and they make a failure of it. All the big railroad systems and most large manufacturing and trading companies have some subsidiary companies whose stock the parent company holds.

Indeed, some companies have nothing to do except hold the stock of other companies. When a promotor wants to combine several companies and control them, often the easiest way is to leave them just as they are but form a new company and buy the stock of the old ones. Sometimes a holding company is used to control a single company, and when that happens it is generally for the purpose of keeping control of a large property in a few hands. At one time it took three corporations to control the Rock Island Railroad. The Rock Island Co. held the stock of the Rock Island & Pacific Railroad Co., which in turn held the stock of the Rock Island & Pacific Railway Co., which owned the road and ran it.

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1. Mr. Harriman has been described as the greatest benefactor that the Northwest ever had. Show how the Union Pacific system has contributed to the growth, population, and wealth of the Northwest.

2. Show in general how the concentration of population and the concentration of capital in great business enterprises commonly go hand in hand, finding illustrations other than that of the Union Pacific.

3. Mention the names of a number of business organizers who have concentrated in their own hands large control of capital.

4. The public is interested in business control, not only from the point of view of the effect which such control has on prices of commodities, but also because such control affects the prices of securities. Show some of the ways in which control affects securities.

5. Review some of the earlier lessons which show the control over the price of securities exercised by various kinds of market organizations.

6. Would it be worth while to break up all big combinations in order to prevent the evils which attend combination of capital?



## DANGERS OF CONCENTRATION.

This particular experiment came to grief, and it shows the bad side of concentrated control. When people who have put in comparatively little money can control a great deal of other people's money they may not care properly for the other people's interests. A stockholder can sometimes make money for himself at the expense of the people whose property he controls, or he may take too many chances with their money because he is risking so little of his own. Even Harriman left one road much poorer than he found it, though he generally made his roads prosper.

There is another danger in concentration. It can sometimes create a trust and stop competition. When sugar refiners, for example, are competing, each one has to put his prices low or people will buy their sugar from others. But when the refiners get together they may set a higher price, and the only way to get out of paying it is to go without sugar. The public is in this way drawn into the matter and finds itself vitally concerned with the problem of allowing combinations when these become powerful enough to fix prices and cut off competition.

There is a law against trusts or monopolies in this country, which prevents combinations from taking in all their competitors. A number of combinations have been broken up under this law. One of these was the Union Pacific Railroad system, of which we have been speaking. Even aside from the law, it has been pointed out again and again that it is better for a business in the long run not to try to stamp out all competition. To do that, it must take over many ramshackle plants that will never be worth anything, just to keep them from competing. It can do better by taking in only the strong plants and leaving the others to do as best they can.

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1. A few years ago there was severe criticism of a number of great corporations on the ground that the directors of these corporations left their management to a few individuals, especially to the officers in charge of the business. What is the duty of a director of a corporation?

2. Why is it objectionable to have interlocking directorates among corporations?

3. How far is it essential that an individual who is going into business should understand the machinery by which great corporations are controlled? Is this matter one which should interest people who are not going into business, as for example young women?

4. The assets of a corporation are very frequently described as including good will and confidence among the large items of the corporation's prosperity. What is meant by good will and confidence?



## THE PURPOSE OF POOLS.

Where competition is sharp, as it often is in modern business, it may necessitate devices which will reduce it. For example, one of the common ways of easing the strain of competition was the formation of a pool. Railroads and manufacturers used to agree on the prices they would charge, or divide up the business between them, or divide the profits. After one of these pools had been formed in sugar refining, the price charged for refining sugar used to go up, and when the pool broke up, the price came down. Railroads entered into pools on freight rates and passenger rates. Such pools were stopped by law, and regulation of rates was undertaken through the appointment of an Interstate Commerce Commission, which represents the Government and has power to set railroad rates.

## COMMUNITY OF INTEREST.

After pools had been declared illegal, Judge Gary, the president of the Steel Trust, used to invite his competitors to dinner and they talked over the prices they were making and what they thought was fair for the trade as a whole, without making any definite agreements. Sometimes the same people hold stock in different companies, and this is called a community of interest. When this happens, some of the directors of one of the companies are generally directors in the others also. Then we have "interlocking directorates," as they are called. In such cases the companies have no official connection with each other, but they may act in harmony. Railroads and large banks often have representation in each other's boards of directors. It is often hard to say whether these arrangements prevent the public from getting the benefits of competition or not.

There can be no doubt that in some cases combinations have been disadvantageous to the public. The principle of central control, however, is of great importance to modern industry and, in the main, business benefits and the public benefits by combination and concentration of control.

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LESSON A-27. CONCENTRATION OF SOCIAL INSTITUTIONS.<sup>1</sup>

It is not in industry alone that concentration and consolidation have been going on in recent years. The advantages which can be obtained when several small country schools are united at some convenient center have led to a widespread movement in many States toward the substitution of consolidated schools for one-room district schools.

## SCHOOLS ARE AT FIRST SMALL AND SEPARATE.

An example of such consolidation is reported at some length in a bulletin of the Bureau of Education. In Harrison County, Miss., there were three small one-room schools located at Coalville, King, and Oakhead. Each of these schools had a single teacher, and the aggregate attendance in all three amounted to about 60 pupils. It is easy to see that the one teacher in each school would be kept busy taking care of from 15 to 25 pupils. The number of classes that had to be held in a single day amounted to more than 30, for there were several classes in geography and penmanship and more in arithmetic and reading. The burden was increased if the teacher attempted to give special attention to the advanced pupils by teaching courses in history and nature study.

The three separate schools could not offer to their pupils any instruction of high-school grade, because the time of the teacher was wholly taken up with the elementary subjects. Furthermore, there was no equipment in the separate schools for instruction in such subjects as domestic science and agriculture because the communities could not afford to put in such equipment for the small number of children who would use it. Even if the apparatus had been put in, the teacher could not have given time to additional classes.

## CONSOLIDATION OF DISTRICTS.

The people of the three districts were persuaded to do what many other groups of districts have done from Maine to California. They consolidated their schools. Near Wool Market post office, on the Biloxi River, they secured a fine site of 5 acres. Here they built a school building and equipped it with a playground, with a domestic science laboratory, and the means of giving courses

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<sup>1</sup> This lesson was prepared by Charles H. Judd, professor of education, University of Chicago. All institutions in which people come together are examples of concentration. The same principle which has operated in building up industry appears in the school and in the church and even in the family, which is the earliest human institution.

in agriculture. The work of the school was extended by the employment of more teachers and by the more economical use of the time of all the teachers. As a result, the consolidated school was able to give a number of new courses, including some high-school courses. The school arranged with a physician in the community to give lectures on hygiene. One of the trustees of the school, a practical farmer, gave lectures on agriculture and allied subjects.

#### BETTER DISTRIBUTION OF TIME.

Economy in the time of the teachers is always one of the most immediate results of consolidation. Under the old district system in the Mississippi schools there were, for example, three small groups of pupils, all being taught to read in the fourth reader. In the new consolidated school the three small groups were all put together in a single class, and the time of two teachers was released for other purposes.

#### TRANSPORTATION.

Consolidation brought with it a new problem which comes up in all cases of concentration, namely, the problem of transportation. The original district schools were near the homes of the pupils, and as usual in such cases pupils came to school without any help from the school authorities. Now that the school served a much larger territory, it became necessary to provide the pupils who lived far from the building with free transportation. This was recognized as a part of the new plan. The school building of the consolidated district was so located that a large number of

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1. From how wide a territory can a rural school draw its pupils if these pupils have to walk to school?

2. From how great a distance can pupils come to a town or city school?

3. How large are the classes in a town or city elementary school? For example, how large are the classes in the elementary school you attended, beginning with the first grade and considering all of the grades up to the high school?

4. Show that it is economical for the community to have pupils taught in classes of 25 or more.

5. Is it possible for a class to be too large for proper instruction?

6. What length of class period in arithmetic or geography would be possible in a district school made up of 30 children? Show why a class period should not be as short as would be necessary in that case.

7. What is the difference between a district school and a graded school? What are the advantages of grading the pupils in a school?

the children could come as they had before—afoot. For the rest a school wagon made the circuit each day and brought them to the schoolhouse door. At the close of school the wagon took the children home. This turned out to be in the long run a very moderate expense, because it took care of so many pupils that the cost for each one was very slight.

#### HIGHER COSTS AND SUPERIOR SCHOOLS.

The new school cost a little more than the three district schools, but the people got the value of their money in two ways. The new school gave high-school courses, so that a number of pupils who would have been compelled under the old arrangement to go to remote high schools were taken care of without the extra expense of going away from home. The school offered a greater variety of courses than had been possible before, and because it had more teachers secured a better adjustment of work. For instance, one teacher was more interested than the others in music and brought up the work of the school in this respect, while another teacher specialized in arithmetic, and so on.

That the people profited by their investment is shown by the fact that land in the district of the consolidated school increased in value from \$10 per acre to \$25 per acre.

#### THE MOVEMENT BECOMES GENERAL.

The consolidated school is a solution of many of the problems of rural life. At the present time more than 6,000,000 boys and girls in the United States live on farms and get in rural schools all the elementary education which they receive. In many parts of the country the number of pupils within reasonable walking

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1. Reference is made in the text to a number of new subjects that have recently been introduced into the school program. Mention any other new subjects which are given in your school or in any school of which you know.
  2. Do you know of any activities similar to the lectures on hygiene and on farming described in the text?
  3. Is the school which you attend used at any time by the community for community gatherings other than school classes?
  4. Can you show that it would be economical for the community to use a school building in the evening and at other times?
  5. Transportation increases the territory from which the school may draw pupils. What are the limits of territory from which it would be advantageous to draw pupils by this method?
  6. Is there a State law in your State which gives a high-school education to pupils living in a district which does not have a high school?

distance of a school has been reduced to eight or six. Some States have expressed judgment against small schools by passing laws to the effect that where there are less than 12 pupils the school must be closed and the district must furnish transportation to some neighboring school where there will be enough pupils to organize reasonable classes.

Even where the number of pupils is not so small as to make educational work difficult or impossible, the small district school has many handicaps. The building is usually bare and ill-kept. The playground is small and unattractive, and everything about the place betokens the struggle which the school has to keep alive. The lonesome teacher gets little inspiration for his or her work. The county superintendent comes to the school once or at most twice a year.

With consolidation the whole situation changes. The school becomes a center for a new community interest. Its very size brings to it attention and interest. The other advantages pointed out in the illustration come rapidly in the train of community interest and pride in the new centralized school.

#### RIVALRY IN CHURCH ORGANIZATION.

Consolidation is not limited to the school. A number of small towns have seen the wisdom of consolidating their churches. The story is told of a little village of 80 families which 10 years ago was trying to support three churches. The denominational rivalries which had led to the three organizations divided the small community of something less than 500 people in all sorts of ways. There was a tendency in all matters that had to do with town improvement for the people to act in separate groups.

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1. Can you think of objections that would be raised by parents or other members of the community to a consolidation of schools?

2. Are there any people in the community who are likely to object to an increase in the cost of schools?

3. Why should the State pass a law with regard to the size of schools if the separate communities within the State are willing to have small district schools?

4. There are definite rules with regard to ventilation and lighting of school buildings. Find out what these rules are and show whether your school conforms to them.

5. Is a playground a necessary part of school equipment?

6. What other officers beside your class teacher have a part in carrying on your school work? Especially, what supervisors are there in your school?

The Sunday services in each church were attended by a small group of faithful people, but even the largest congregation never had more than 150. The support of the preachers and the payment of running expenses were financial burdens which constantly stared the three groups of church officials in the face.

#### CONSOLIDATION OF CHURCHES.

The people of the village were finally persuaded that the interests of all could be served better by uniting. The combination of the three churches when first proposed was rejected by some of the people as impossible and as bordering on the sacrilegious. The more they thought about it, however, the more they realized that the differences in belief between denominations were comparatively slight. The advantages to the town of a single strong church organization also became more impressive the more they were discussed. Among other points it was brought out that the young people would be united in a single Sunday school and would as a result be able to continue within the church the general social activities which of late had been growing up outside of the church. The charities of the town would be better managed and the literary and intellectual interests of the people would be provided for in an adequate way because carried on in a single center.

So the churches united. They did exactly what business concerns have learned to do in order to eliminate wasteful competition and reduce overhead expenses.

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1. How is the money necessary for the support of a church collected?
  2. Show on purely financial grounds the difficulty that would be encountered in a community of the size described in maintaining three churches.
  3. There are a great many movements within the modern church looking toward the consolidation of different denominations. Find out about some of these movements and find out also why it is easier at the present time to get people interested in union between denominations than it was at an earlier period.
  4. Point out the disadvantages to a town of unorganized charities conducted by independent agencies.
  5. Get examples of city organizations known as united charities and indicate the wisdom of such combinations.
  6. What other forms of social organization beside the church have an influence on the activities of communities?
  7. What sort of an appeal does one make to the community when one is trying to get support for a park or other public improvement?



## MANY INDIRECT ADVANTAGES OF CONSOLIDATION.

The results of the union were more than could have been anticipated. With the united funds of the three churches it was possible to secure the services of a vigorous preacher who became at once a leader in town affairs. People began to attend until nearly everybody in the village went to church. The social activities of the one church were easy to carry on, because of the cooperation of so many people. General town enterprises entirely apart from religious matters began to receive better support. The need of a village park was discussed at some of the social meetings. The church organized a series of moving-picture exhibitions. The school problems of the community were discussed and a new school committee was selected. A number of new families moved into town so as to enjoy the advantages. In short, a united community began to reap the rewards of their good judgment in combining their religious and social activities.

To be sure, there was from time to time some difficulty in keeping matters going harmoniously. There were people who wanted to dominate the situation for selfish purposes, but as the movement got well under way the difficulties became less common and easier to set aside.

## SOCIAL INSTITUTIONS EXAMPLES OF CONSOLIDATION.

Schools and churches are examples of concentration even before they are combined in the ways described in the foregoing paragraphs. The school is an institution to which a number of families send their children because education can be carried on there more economically and with better equipment than would be possible if each family attempted to educate its own children without the cooperation of the rest of the community. The church grows out of the desire for cooperative worship.

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1. What are some of the kinds of equipment used for purposes of instruction in the school you attend?

2. Show that a public park is similar to the equipment which is supplied in your school and make it clear that each member of the community who uses the park gets the advantage of this public property.

3. Show that a public library is community equipment.

4. Should the community have a collection of scientific specimens and a collection of pictures for the use of all of the people? In this connection make it clear that such collections can not be owned by individuals.

5. What are the advantages in a social way of bringing people together in the church and in the school?



Furthermore, if we follow the organization of schools from lower to higher institutions, it becomes evident that the highest schools are possible only through the cooperation of larger and stronger communities. The rural district can support only an elementary school. The town may have a high school. The organization of the highest institutions is dependent either on the establishment of a large endowment which means concentration of capital, or on the action of a large community, such as a State.

#### THE DAY NURSERY.

The truth of these statements about schools of different grades can be illustrated by a few examples. In cities it is sometimes found necessary, under the stress of economic conditions which send mothers out of the home to earn wages, to provide cooperative protection for children who are too young to go to school. Then there are organized day nurseries or kindergartens. These may be described as cooperative homes. They put in charge of a whole group of children a single nurse or a single kindergartner who can do for the whole group what would have to be repeated many times over if the children were kept at their homes.

#### COMBINATION BRINGS EXPERT SERVICE.

When it comes to describing schools which do more by way of instruction than one of these lowest grades of schools, and even in describing the nursery itself, one may emphasize the fact that consolidation makes it possible to obtain expert service. A trained nurse not only takes care of more children than the single mother could, but the nurse does it much more skillfully. What is true of the nurse is still more true of the teacher in an elementary school or higher school. Indeed, in the case of schools, the State assures itself that expert services are obtained by

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1. Make a list of the experts who are accessible to all members of the community by virtue of the cooperative use of their services.
  2. What part does the State take in training expert teachers? Explain its action in this respect in terms of the foregoing question.
  3. Where the State does not actually train members of the professional class, it frequently requires them to secure a public license before they enter upon their activities. Explain the reason for this public license.
  4. The institutions which are discussed in this lesson merge insensibly into the Government itself. Show how the Government is an example of social concentration.
  5. Show how a system of taxation is an example of concentration.
  6. Is it legitimate to support technical schools out of public taxes?

requiring that every teacher pass examinations which show that the teacher is especially equipped for the task which society has intrusted to the school.

#### COMBINATION BRINGS EQUIPMENT.

Not only does society obtain expert services through combination, but it also obtains better equipment. This was pointed out in the case of the consolidated school in Mississippi. It is demonstrated on an impressive scale in the library and laboratories of any well-equipped high school or university. In these higher institutions students are gathered from a wide area and have better opportunities than could be supplied in the different localities from which they come, because the centralized institution provides for selected people who represent in concentrated form society's demands for a certain type of training. The world needs chemists and engineers and journalists and preachers. In the higher institutions these needs are provided for economically by grouping the educational facilities and the people who can take advantage of them.

The support of a higher institution of learning illustrates the principle of concentration as well as the student body and the equipment. This support comes from larger taxing units or from wealth that in turn represents large fields of business operations. Thus, a university may be supported by a large municipality or more commonly by the State. A small town could not support a university. When endowment is the source of support, the location may be in a small town; but the resources of the institution can be traced to the great centers of business.

What has been said about schools and churches as examples of social concentration could be enlarged by discussion of clubs and fraternal orders and all kinds of social institutions which men have set up as means of satisfying their impulse to get together and of deriving the advantages of cooperative society.

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## Chapter VIII.

### THE WORKER AND THE WAGE SYSTEM.

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This chapter is devoted to the human element in industry—the workers and the problems which concern them. The lot in life of each individual is determined by his own ability and his own efforts, provided the situation in which he is placed is such as to make it possible for him to utilize his powers. In like circumstances men of unusual talent and industry will always rise above their fellows, but the great mass of average men will continue to be dependent principally upon the wages received for their personal efforts. Machine industry has been of incalculable advantage to society, and the worker has shared in its benefits. His position is far better than that of the worker of the past. He is, nevertheless, subject to the uncertainty and insecurity that affect all industry. With his employer he is dependent upon the prosperity of the business with which he is connected, and he is subject, besides, to other risks of his own. Industrial accident, occupational disease, undue fatigue, inadequate wage, and inadequate opportunity are among the risks to which he is liable. To stabilize and protect industry is the constant aim not only of individual business men but of public organizations and governmental agencies. This is for the benefit of employer and worker alike. A great deal is done to add to the security of the worker not only by the workers themselves but also by individuals and organizations outside the ranks of labor, and by society as a whole.

The vast problem of organizing the Nation's industrial man power for the prosecution of the war is discussed in Lesson A-29. Never before had the need arisen for production on such an enormous scale, and the country was not prepared for the task. In the first months of the war there was little coordination between the Government purchasing agencies, and no cooperation between the manufacturers who undertook to supply unprecedented quantities of materials. A great deal of confusion and waste resulted. The necessity for coherent administration was manifest. Order gradually came out of the chaotic condition, and a National Labor Program has been evolved which is expected to result in complete and effective organization.

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#### LESSON A-28. THE WORKER IN OUR SOCIETY.

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AND

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All through these Lessons in Community and National Life we have been noticing different aspects or features of the industrial society in which we live. It is a society of specialists, each of us working in his own narrow field and through the use of money exchanging his products for those of other specialists. It is a very interdependent society. Nothing significant can happen in even a remote corner of the earth without its consequences being felt the entire world over. It is a technological society. Science

has enabled us to harness giant forces and to compel them to do our bidding. It is a greatly concentrated society. Industry is on a large scale; the ownership of wealth and income is concentrated; population is massed. It is a society whose operations are guided and controlled in part by the wishes of its individual members and in part by those powerful agencies of social control—law, custom, habit, and public opinion.

#### THE POSITION OF THE WORKER.

What do all these facts mean for the worker? We may be sure that his position in this society, while partly determined by his own efforts, is largely the result of the situation in which he finds himself. Whether for better or worse, his position is that of a wage earner. He sells his product, labor, to others who control the nature of his activities.

We must remember that this has not always been true. Indeed, the wage system is really quite recent, as human history goes. We may pass by without comment the period of slavery. It had some good features for the worker. He could not be "discharged" under that system, and his "employer" could not well afford to let him be underfed, underclothed, or cared for in a way which might result in illness or death. A discussion of serfdom may also be omitted. It, too, had its good features, but none of us would be willing to exchange the individual freedom and the individual initiative of our present system for the subservience and stagnation of slavery or serfdom.

#### THE RISE OF THE WAGE SYSTEM.

Even after serfdom had passed away in our mother country, England, there was not a wage system in the sense that practically

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1. "Ours is a society of specialists." Point out as many ways as you can in which this fact affects the position of the worker.
  2. "Ours is a very interdependent society." Point out as many ways as you can in which this fact affects the position of the worker.
  3. "Ours is a technological society." Point out as many ways as you can in which this fact affects the position of the worker.
  4. "Ours is a greatly concentrated society." Point out as many ways as you can in which this fact affects the position of the worker.
  5. "Ours is a society whose operations are controlled by social control." Point out as many ways as you can in which this fact affects the position of the worker.
  6. "The worker sells his labor to others who control the nature of his activities." Show in detail how others control his activities.

all workers received wages by working for others, though of course there were many cases of people working for hire. As we have seen in earlier lessons, the worker was likely to own the raw material on which he worked, to own the tools with which he worked, to own the product which he had made, and to fix for himself the circumstances and conditions of his labor. And this was true not merely of a few people. The whole organization of industrial society of that day was drawn on the hypothesis that the worker would pass through the period of apprenticeship and become an independent worker, master of his own fate.

In the lesson on the rise of machine industry we have seen how all of this has been changed during the modern period. The discovery of America and other new lands, the improvement of ships, the invention of the compass, and other inventions which widened the market, made it impossible for the ordinary craftsman to know enough about market conditions to sell his goods to the best advantage. Specialists arose to perform this work. As was shown by the case of the clothiers, the final outcome was gradually to put the average worker into a more "dependent" position. This process was greatly accelerated by the coming of the factory system with its expensive machinery; its necessity of grouping large numbers of workers in a single space in order to use power to good advantage; its requirement of specialized knowledge for both production and selling. The artisan had no choice but to work for those who could buy the new machinery and who could build the huge factories required to house it.

This change has in many ways been to the advantage of the worker and of society as a whole. The amount of goods produced under the new system is tremendously greater than the amount

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1. What was a "master craftsman"? How could one become a master craftsman?

2. Is the whole organization of industrial society to-day drawn on the hypothesis that the worker is to become independent?

3. It has been the boast of America that every boy has an opportunity to rise to any position in the Nation for which his ambition and faculties fit him. Has large-scale production placed any obstacles in the way of these opportunities?

4. What effect has the "industrial revolution" had on the workman's ownership of his home and the land on which it stands?

5. When was the printing press invented? Do you suppose this invention had any effect upon the widening of the market?

6. Do you know of any case where employers have tried to improve the conditions of living of their workmen as an aid to efficiency in production?

produced in the old craftsman age. Necessities, comforts, and conveniences were made available as they had never been available in the past. The worker has shared in these direct benefits; and there have been indirect benefits in the form of improved public facilities, expansion of educational opportunities, and better conditions of living generally. His position is better than the position of the worker of the past. Since, however, it is wiser to remedy evils than to boast of gains, this lesson will be concerned primarily with the difficulties in which the worker finds himself under the modern wage system and with the devices which are emerging to enable him to meet those difficulties.

#### THE DEPENDENT WORKER IN A SPECULATIVE SOCIETY.

There can be no question that there are many elements of uncertainty and insecurity in the position of the modern wage worker. Some of these arise out of his so-called "dependent" position. Being dependent upon the employer for hire, the worker can fare well only when he is employed. As was shown in another lesson (Lesson C-8), his own wishes play relatively little part in determining whether employment will be available for him. In the main, security of employment is assured only when the position of the employer is secure, only when industry is moving on an even keel.

But industry does not always move on an even keel. It pitches and careens. Seasonal fluctuations, panics, crises, depressions, are everyday words in our industrial vocabulary. Even when industry as a whole is proceeding fairly smoothly, individual businesses may be far from secure. Our society is a speculative society, and speculation means uncertainty.

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1. In an encyclopedia or industrial history look up the word "guilds" and learn what you can of them. Was the market wide or small in the time of the guilds?
  2. Why could not all the artisans become factory owners when machinery came into common use?
  3. If necessary, find out from some industrial history of England who the clothier was. How did he contribute to putting the average worker into a more dependent position?
  4. "The position of the worker is better than it was in the past." Make a list of particulars in which it is better.
  5. "Ours is a speculative society." What does the word "speculative" mean as it is used here? Point out the ways in which the worker is affected by living in a speculative society.



All forms of human endeavor in material things are, or were at their beginning, speculation. Every ship that goes to sea carries with it a speculation and leaves another one behind it at Lloyd's. Every man who insures his life or his house buys a speculation, and every company that insures him sells one. The farmer speculates when he fertilizes his land, again when he plants his seed, and again when he sells his crop for future delivery, as he often does, before it is planted or before it has matured. The merchant contracts to fill his shelves long before spring arrives; he is speculating. The manufacturer sells to him, speculating on the hope or belief that he will be able to buy the necessary raw material, and again on the labor, the looms, and the spindles necessary to make the delivery. It sounds like "This is the house that Jack built," and its endless chain of sequences; a chain, indeed, and one no stronger than its weakest link. Interfere with any part of it, and the whole commercial structure which it binds together must fall apart. The grower, the manufacturer, and the merchant *must* speculate.

#### CLASSES OF RISKS FOR EMPLOYERS.

It is worth our while to get a fairly clear picture of the kinds of risks which the business manager faces in this speculative society of ours. A writer on risk as an element of our industrial life divides risks into two classes—static and dynamic.

Static risks include those due to natural causes, such as damage by lightning, hail, earthquake, storms, disease, and many others. Risks arising from ignorance are a large class, which includes many fires, bankruptcies, sicknesses, accidents, early deaths, and failures in business from misdirected effort. Carelessness is closely akin to ignorance as a cause of damage. Lack of moral character gives rise to a class of risks known by insurance men as moral hazards. Dishonest failures, bad debts, etc., would fall in this class, as well as all forms of danger from the criminal classes.

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1. Can you cite any cases of financial loss arising from ignorance? Any arising from carelessness? Any arising from lack of moral character?
  2. Have you seen cases of loss brought about by a change in the wants of society? Does a change of style reflect a change in wants?
  3. Have you seen cases where loss occurred because of changes in methods of production?
  4. The production of shoes begins with the making of machines to make machines to make shoe machinery. Is this statement true or does production begin even further back? Comment on the risks in beginning production so far in anticipation of demand.
  5. "The existence of fixed capital in modern industry makes risks greater for the business man than they were in mediæval history." Does the existence of fixed capital increase risks? If so, has the business man's position been kept secure by other factors which diminished risk?



Other risks may be called dynamic. These are chiefly of two kinds, the first being changes in the wants of society. As civilization advances, human desires are subject to constant modification and to sudden changes in amount and direction. Changes of style which can not be foreseen by producers are an example of changes in the wants of society. A stock of men's hats which is salable to-day will perhaps be utterly without a market next year. A dealer who has an overstock is subject to heavy loss.

The second kind of dynamic risk springs from changes in methods of production. These changes give rise to losses to producers. Sometimes these losses fall upon those who are attempting to introduce new processes. There is the chance that the process may be mechanically defective. It may not create the desired commodity as the projector of the enterprise expects. If, on the other hand, the dynamic change consists in offering some new commodity for the comfort and pleasure of consumers, the public may fail to give the expected welcome.

Sometimes these losses fall upon producers in consequence of the introduction of improved processes by others. There is constant danger that an innovation or an improvement of some kind will destroy the value of property in which a great amount of capital has been invested. Losses of this kind have been exceedingly common in recent years. A notable case was the destruction of capital incident to the opening of the Suez Canal. The ships, mainly sailing vessels, which went around the Cape of Good Hope and carried the products of India were not adapted to the canal, and an amount of shipping estimated at 2,000,000 tons was rendered practically valueless.

#### RISKS BECAUSE OF FIXED CAPITAL AND INTERDEPENDENCE.

Two further sources of risk may be mentioned. The risks of capital invested in business are at their greatest when a large amount must be put in fixed capital, such as machinery, railroads,

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1. If you buy a share in a railroad that is being constructed, are you a risk taker?
  2. Is the boy who spends time and money attending high school and college taking a risk that these expenditures will not prove profitable?
  3. When the war is over, our National Government will cease being a large-scale buyer of shoes, clothes, steel, and shells. Are the manufacturers who are now equipping their factories to make these things taking a risk? Explain.
  4. Can you see any relation between the risks assumed by the manufacturers mentioned and the profits which they are asking?
  5. When the war is over, the cessation of Government orders will stop the operations of many factories. Will this throw men out of employment? Be ready to explain how "interdependence" may cause this disturbance to affect other lines of business.

and permanent buildings. In some businesses millions of dollars must be spent and years of time must elapse before a single bit of product is made. In our rapidly changing society it is quite possible that a large part of this investment and expenditure of time and effort may have been wasted. Wants may have changed; new processes may have been invented.

Then, too, our society is so interdependent that a business man may have heavy losses because of happenings over which he had no control, and indeed concerning which he may not have known. For example, when the present great war began in Europe, the price of cotton declined, and many planters and merchants in the South failed in business; that is to say, they could not pay their bills. Their creditors (and this included banks from which they had borrowed and merchants from whom they had bought goods) were in some cases forced into bankruptcy also. These creditors had still other creditors, and there spread over the South, and even into the North, a condition where banks, farmers, and merchants were affected by the fall in the price of cotton.

#### ELEMENTS OF INSECURITY FOR THE WORKER.

We must remember that we are discussing the risks to the employer in modern speculative industrial society because these risks affect the worker. They serve to explain why it is that great numbers of workers are frequently thrown out of employment because of conditions over which the workers had no control. This is, of course, not saying that all unemployment comes from social causes. Some of it is due to the shortcomings of the individual.

Even when capital is secure, even when the worker has steady employment, he finds himself faced by many other uncertainties.

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1. Ask some merchant if he has ever lost money through a change of fashions. Ask some coal dealer how seriously his business is affected by a warm winter.

2. Show why long hours and fatigue increase the dangers of industrial accident. Do they increase the dangers of occupational disease?

3. Are long hours of work and great fatigue caused by the presence of machinery, or are they caused by the existence of the gain spirit in our society?

4. What are some machines that harness forces of nature?

5. It is still a rule of law in many States that a worker, when he takes a job, "assumes the risks of the occupation," and that as a result he can not recover damages at law if he is injured in the course of his work. Does it seem to you that an ignorant workman who seeks employment in a steel mill or other large factory can know the risks involved?

Industrial accident, occupational disease, fatigue, inadequate wage, inadequate opportunity, are all possibilities for the modern workers, and in thousands of cases they become actualities.

#### ACCIDENTS, DISEASE, AND FATIGUE.

Since the incoming of machine methods the worker in most modern factories has never been free from danger of serious physical harm. Modern technology has harnessed the forces of nature, and these forces are so resistless that when they escape control, their power for destruction is very great. The huge machines that are driven by these forces in modern factories are so complicated that the worker can not comprehend and understand them as he did the tools of earlier days. This fact makes him far less able to protect himself from accidents.

Furthermore, modern industry is very interdependent on the side of production. A fellow workman starts an engine in a far-off building, and a machinist's hand is crushed in the machine he was cleaning. A fellow miner is careless with dynamite and a hundred men are killed. An inspector in a steel mill is ignorant, passes a defective steel beam, and a score of workers using this beam in bridge construction are precipitated into a swollen stream.

To the dangers of accident in the worker's position must be added the dangers of occupational disease. Lead poisoning, floating dust particles, sudden changes of temperature, play their part in rendering the worker's position insecure.

All these dangers and risks are aggravated by the fatigue that comes from monotonous, specialized labor amid the rhythm and roar of gigantic machinery and by the long hours of labor that prevail in many kinds of work.

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1. The legal precepts stated in the preceding questions grew into our law when tools were simple and when the size of manufacturing units were small. With this fact before you, do you see what is meant by men who say that such laws are cases of social control which does not fit modern conditions?

2. Are any trades practiced in your locality that you believe are likely to lead to disease of workers?

3. Do you know of any industrial accidents that have occurred in your community?

4. Does it surprise you that 20 per cent of the population of our industrial States are ordinarily below the poverty line? Is this sometimes due to the shortcomings of individuals? If so, to what kinds of shortcomings?

## INADEQUATE WAGE AND INADEQUATE OPPORTUNITY.

Inadequate wage and inadequate opportunity are unfortunately too frequent. The facts concerning this situation admit of no dispute. An investigation conducted a few years ago showed that in the industrial States of the Nation "probably as large as 20 per cent of the population are ordinarily below the poverty line. In this computation a purely physical standard, a sanitary dwelling and sufficient food and clothing to keep the body in working order, defines the poverty line, with no monetary allowance for intellectual, aesthetic, moral, or social requirements."

The reasons for this situation are not hard to find. They all center about the fact that the worker is in a weak position in the bargaining relation.

## HIS WEAK BARGAINING POSITION.

To begin with, the powers and capacities of the worker are frequently much more influenced by the amount of food, clothing, shelter, and education which his parents have been able to provide than they are by any action on his own part. His parents may not have been able to give him an even start in life. Suppose, however, that they have done so. His bargaining position is still weak. The only commodity which he has to sell is labor, and he must go in person with this commodity when it is sold. This limits his "market opportunities" very seriously. An attractive job offered in another town or in another State may be quite out of the question for him. He may not be able to leave his home, his family, and his old associates. He may not be able to afford the trip involved.

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1 "The worker is the victim of all the causes of insecurity affecting capital and has others peculiar to his own lot." Is this true? What are some of those peculiar to his own lot?

2. "Responsibility for industrial accidents and even for industrial conditions is largely social. The responsible individual can not be isolated." Explain.

3. What effect has the transfer of thought, skill, and intelligence from the worker to the machine had upon the security of the worker's position?

4. It is sometimes said that the greatest difficulty with the situation in which labor finds itself is that his uncertainties and insecurities are cumulative. What does this mean? Does it seem true to you?

5. Must the owner of wheat or iron go with his goods if he wishes to market them? Why must the laborer accompany his labor to market? What effects does this requirement have upon the bargaining strength of the laborer?

Then, too, labor is a very perishable commodity. The part which is not sold to-day can never be sold. It disappears and the worker receives no income for it. This would not in itself be so significant were it not for the fact that the seller of labor seldom has a large reserve of money. He can seldom afford to lose any income. It is far more important for him to find a quick market for his labor than it is for the employer to buy his labor. This, of course, makes his disadvantage in bargaining with his employer a serious one.

His bargaining power has been further weakened by the fact that specialized machinery has been introduced into many industries, so that no special skill is required to do the work. In the days when the artisan alone knew the "tricks of his trade," he was in a position to bargain for good wages. To-day, when "thought, skill, and intelligence have been transferred to the machine," hesitation on the part of one worker to accept a job is very likely to mean that it falls to another.

These difficulties are increased by the fact that the worker has typically what is known as a "short-time contract." Usually he works by the hour, the day, or the week. He may, accordingly, be dismissed at the very first moment at which it is profitable for his employer to dismiss him.

Taking all these features together, it is not surprising that many thoughtful people feel that the worker's "freedom of contract" does not leave him in a very advantageous position. Nominally, he is free to contract as he chooses, to accept or to refuse work under given conditions, to drive a good bargain. Actually, his ability to do these things in a way satisfactory to himself is not very great.

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1. "Our great trouble is the lack of organization in the labor market. The market for corn, cotton, steel, etc., is highly organized. That for labor is highly disorganized. If it were well organized most of the elements of insecurity of the worker would disappear." Why has the market for labor remained unorganized as compared with that of cotton? What concrete things would make for organization of this market? Would it accomplish what is here claimed for it? Is organization of the labor market synonymous with organized labor?

2. Consult the science or geography teachers in your school for information on Government weather reports. Show how these reports lessen risks.

3. Ask the teacher of civics to refer you to information concerning the Department of Agriculture and the Department of Commerce. List the ways in which these activities of Government lessen risk.

## THE LOT OF THE WORKINGMAN.

A spokesman for labor once summarized the lot of the workingman in this language:

You are a workingman. All your life you have known the conditions which surround the lives of working people like yourself. You know how hard it is for the most careful and industrious workman properly to care for his family. If he is fortunate enough never to be sick, or out of work, or in strike, or to be involved in an accident, or to have sickness in his family, he may become the owner of a cheap home, or, by dint of much sacrifice, his children may be educated and enabled to enter one of the professions. Or, given all the conditions stated, he may be enabled to save enough to provide for himself and wife a pittance to keep them from pauperism and beggary in their old age.

That is the best the workingman can hope for as a result of his own labor under the very best conditions. To attain that level of comfort and decency he must deny himself and his wife and children many things which they ought to enjoy. They have to forego many innocent pleasures; to live in poor streets, greatly to the disadvantage of the children's health and morals; to concentrate their energies on the narrow and sordid aim of saving money; to cultivate the instincts and feelings of the miser.

The wives of such men have had to endure privations and wrongs such as only the wives of the workers in civilized society ever know. Miserably housed, cruelly overworked, toiling incessantly from morn till night, in sickness as well as in health, never knowing the joys of a real vacation, cooking, scrubbing, washing, mending, nursing, and pitifully saving, the wife of such a worker is in truth the slave of a slave.

At the very best, then, the lot of the workingman excludes him and his wife and children from most of the comforts which belong to modern civilization. A well-fitted home in a good neighborhood, to say nothing of a home beautiful in itself and its surroundings, is out of the question; foreign travel, the opportunity to enjoy the rest and educative advantages

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1. What are the causes of unemployment? What is meant by saying its consequences are cumulative?

2. "Formerly the workman owned the instruments with which he worked. To-day the instruments are all owned by another class, the capitalists. Now, since without instruments the workman's labor power is useless, he is obliged to accept such wages as the capitalist may dictate, even though these are far below what the laborer produces." Write out the converse of this argument, showing that the capitalist is at the mercy of the laborer. Is either statement correct?

3. Draw up a list of reasons why the employer is likely to have a superior position in the bargaining relation. What of it? In so far as evil consequences result from this situation, are they evil consequences for the worker or for society at large?



of occasional journeys to other lands, is likewise out of the question. Even though civic enterprise provides public libraries and art galleries, museums, lectures, concerts, and other opportunities of recreation and education, there is not the leisure for their enjoyment to any extent. For our model workman, with all his exceptional advantages, after a day's toil has little time left for such things, and little strength or desire, while his wife has even less time and even less desire.

The best that the most industrious, thrifty, persevering, and fortunate workingman can hope for is to be decently housed, decently fed, decently clothed. That he and his family may always be certain of these things, so that they go down to their graves at last without having experienced the pangs of hunger and want, the worker must be exceptionally fortunate.

This statement of the lot of the workingman is at once an indictment of an existing situation and an expression of an aspiration for the future. This aspiration is laudable in its aims, whatever may be its possibilities of achievement. Most persons will agree that its achievement is a matter of a distant future. There is no need of a long wait, however, to bring about conditions of greater security for the worker. Indeed, society has been steadily engaged at this task for generations, and considerable progress has already been made.

#### STRUCTURES AND DEVICES MAKING FOR SECURITY OF CAPITAL.

Since the worker is liable to suffer from the uncertainties in which capital and management find themselves, even though he has had little, if any, part in bringing about the state of affairs which has caused these uncertainties, it is of interest to the worker to see the structures and devices which are emerging to render the position of capital more secure.

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1. Are risks greater in a changing condition of industry? Why or why not? Are risks greater in a wide market?
  2. What is chance? What is its bearing upon the speculative character of modern industrial society? As far as this one factor is concerned, is society becoming more or less speculative?
  3. Illustrate risk being reduced (1) by increasing our knowledge of the future; (2) by employing safeguards; (3) by insurance; (4) by speculative contracts; (5) by social control.
  4. Is it possible by foresight and calculation to reduce or to avoid some of the risks of industry? All of the risks of industry?
  5. Does insurance reduce risks or does it transfer risks from the individual to society? Grant that it does only the latter, is the function socially justifiable? Just what is the function of insurance in modern industrial society?

In this speculative society of ours we look to the individual to make experiments, to try new ventures, and to estimate needs in old ventures. Any devices which will reduce uncertainty in these ventures, which will provide safeguards against mischances, which will enable more accurate knowledge of the character of the venture, or which will enable the business man to shift the risk of loss to others, serve to make his position more secure.

#### INFORMATIONAL DEVICES AND INVENTIONS.

There are many such devices. Many magazines, "trade journals" they are called, aid business men to keep abreast of the times and to anticipate changes in methods or in organization that are likely to affect industry. Similar in their general purpose and in their consequences to these privately managed devices are various agencies or bureaus of Government. Take, for example, the work of the Department of Agriculture and of the Department of Commerce. These departments furnish a wealth of information which enables business men to estimate more accurately the conditions which they will face. The Bureau of Crop Estimates facilitates predictions concerning crops the entire world over. The Bureau of Markets maintains a nation-wide network of telephone, telegraph, and postal facilities which provide accurate information on marketing conditions. The weather reports enable farmers to anticipate to some extent storms, showers, "dry spells," and "cold snaps," and to plan accordingly. The Consular Service and the various statistical reports on trade and industrial conditions render corresponding service to the manufacturing world.

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1. What attempts have been made in modern industry to give workmen a more direct interest in the product of their labor?
  2. If you were a wage worker, would you think it too early to begin now to plan to make the industrial disturbance and depression at the end of the war as slight as possible?
  3. In what ways is it charged that immigration increases the insecurity of the position of labor? Does the argument apply primarily to skilled or to unskilled labor?
  4. It has been argued that heavy immigration tends to lower the standard of living of the worker in this country. On what grounds is this stated? Suppose it is true, what difference does it make to the worker? What difference does it make to society at large?
  5. "Society pays pensions to persons wounded in war. It should be willing to pay pensions to those wounded in providing society's daily subsistence." Is this a sound argument?

Similarly, various devices and improvements serve to reduce the risk of shipwreck, fire, explosion, burglary, etc. A modern ship is built in compartments as a safeguard against shipwreck; fire escapes are a safeguard against loss of life by fire; safety valves against explosions; and burglar alarms and safety-deposit vaults against burglary.

#### SPECULATIVE CONTRACTS AND INSURANCE.

Of the many other methods which men have devised to lessen the risks of industry, perhaps the most important are speculative contracts and insurance. Some months ago a house builder felt that because of a growing scarcity of materials there was some risk that he would not be able to get his materials when he needed them. He transferred this risk to others by making contracts with people who furnish such materials by which they bound themselves to deliver. Such operations are very common indeed in our society, and since the persons who agree to furnish the materials are experts in their field, it is safe to assume that the risk bearing has been placed upon the shoulders of those best fitted to bear it.

Of forms of insurance we have a multitude. Its purpose also is primarily that of enabling a man to shift his risk. Companies have been formed which have made careful calculations concerning the chances of loss from various causes. On the basis of their calculations they take small sums, called "premiums," from a great number of persons and from the total of these premiums repay losses that occur to any of the insured persons. By means of insurance, business men can now largely free themselves from the financial risks that come from fire, wind, rain, hail, lightning, theft, wreck, accident, illness, and death.

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1. How does a labor union strengthen the bargaining position of labor?

2. The employer sometimes says that the union interferes with the "workman's individual liberty" to work in the way and under the conditions which he chooses. What can be said for and against this statement?

3. What are the main objections of the employer to trade-unions?

4. What is the final weapon of organized labor in a controversy, and how is it effective?

5. Have there been any recent strikes in industrial plants in your neighborhood? What were the causes? How were they settled?

6. Were the workmen concerned in them organized only locally or were they affiliated with one of the national unions? What advantage has the worker in being affiliated with a national union?

## DEVICES MAKING DIRECTLY FOR SECURITY OF THE WORKER.

It is clear that many devices and institutions are coming into existence which tend to make the position of employers more secure. Security of the employer contributes to security for the worker, but as we have seen, even if employers were entirely secure, there would still be insecurities for the worker. What is done to meet the insecurities flowing from industrial accidents, industrial disease, fatigue, inadequate wage, and inadequate opportunity? A great many things. Some of them are done by the workers themselves, some by persons and organizations outside the working class, and still others by society as a whole.

One of the most important agencies that the workers themselves have developed for this purpose is the union. A union is simply a body of workers who agree to act as a unit in establishing relations with their employers. Working thus as a unit, they greatly improve their bargaining position and are thus able to some considerable extent to overcome many difficulties mentioned earlier in the lesson. In addition to this so-called collective bargaining work of unions, most of them promote the welfare of their members in other ways, such as the payment of benefits when their members are sick, out of work, on strike, or disabled by old age. They have also played their part in bringing about action by society as a whole. They have influenced legislation, combated child labor, fought excessive hours, and striven for safeguards against accident and for proper sanitation in factories. It has been said of them that they are impersonal devices to enable the worker to cope with the impersonal situation in which he finds himself in our modern society.

## THE WORK OF INDIVIDUALS, ORGANIZATIONS, AND SOCIETY.

Then, too, individuals and organizations outside the ranks of labor itself are contributing to the security of the workers. The Consumers League, by urging the public to buy goods made under

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1. Draw up in outline form a statement of the relation of vocational guidance to the security of the worker. Do the same for employment agencies.

2. "Industrial success is personal, not social. The existing social system is not keeping men at the bottom. It is their own personal deficiencies that keep them there." Give reasons for or against.

3. Why do employers engage in welfare work? Is it to furnish incentive to labor? Is it on humanitarian grounds? Is it because it pays? Are there other possible reasons?

proper conditions of labor, plays its part. The various individuals and associations which promote vocational guidance, safety devices, public health, employment management, employment agencies, and private insurance systems play their parts. An encouraging feature of the struggle of the worker for security is found in the fact that in many respects security for him spells security for others. Others, accordingly, find it to their interest to help him.

And we must not overlook the part which society as a whole is playing. Minimum wage laws, factory-inspection laws, provisions for social insurance, workmen's compensation acts, provisions for vocational education, laws restricting the number of immigrants who are admitted to the country, civil-service laws providing for stability of employment, make a fairly long list of the ways in which society is helping. The list is, however, only a part of the great protective codes which are being developed by a society which is becoming conscious of the need of safeguarding its workers.

#### THE WAGE SYSTEM IS NEW.

We must remember that our modern system of industry is very new. It is too new for us to understand all its complex elements, and we accordingly improve it but slowly. We find, too, that each element of the problem is so related to others that there is always danger of a radical change in one element increasing our difficulties in other elements. Perhaps the newness of the wage system should encourage us. We may reasonably hope that when we have had time better to understand our economic system, we shall find ways so to improve it that the position of the worker will be vastly better than it is to-day.

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LESSON A-29. THE WAR LABOR ADMINISTRATION.<sup>1</sup>

Modern war, we have learned, is a war of specialists. Every nation of Europe has learned that if it is to meet the strain which the war has imposed on it, the whole nation must be used in the struggle. Each citizen must be put in the place for which his training and ability best fit him. Some men are more useful for fighting at the front. Other men are more useful in the shops. Still other citizens are best fitted for positions of authority, to direct and manage different branches of the work. The whole situation presents a vast question of organization, a problem which the British have termed that of the proper utilization of "man power."

## THE ORGANIZATION OF THE NATION'S MAN POWER.

As soon as the United States entered the war the same problem presented itself to her. How could the Nation be organized so that each individual in each community could devote his effort and energy to the conduct of the war with as little waste as possible of his particular talents and training? The selective draft was the answer as regards the military forces of the country. The men who can best be spared from industries necessary for making war supplies and from home responsibilities are selected for service in the fighting forces of the country. But this was only a small part of the problem. Plans had to be made for using in the most effective manner the men who were left at home.

This country, like the other warring nations, finds that it needs vast increases in its supply of guns, ammunition, aeroplanes, shops, uniforms, and the many other vital products which the prosecution of war demands. New plants have to be constructed for these purposes, and old plants which formerly were engaged in making goods for peace-time needs only, have to be devoted in whole or in part to the new work necessary for the war. In order to carry out this purpose, many workmen who were formerly engaged in the manufacture of these less important products have to be transferred to other forms of work more urgently needed. In addition, matters must be conducted so that there will be as little

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<sup>1</sup> The material for this lesson was supplied by William B. Wilson, Secretary of Labor. It shows the necessity of a coherent administration of the "man power" of the Nation in the present national emergency and the steps which are being taken to provide such an administration. Lessons B-28, Women in Industry; B-29, Labor Organizations; B-30, Employment Agencies; B-31, Employment Management; C-29, Child Labor; C-30, Social Insurance; and C-32, Housing for Workers, contain much additional material on war labor matters.



waste as possible of the effort of all workers. This, then, is the man power problem of America.

How is it to be solved? Before coming to the steps which the Government is taking to meet it, let us look a little further into the ways in which man power may be wasted in time of war.

#### WASTE OF MAN POWER.

First, there is the interruption in work which may be caused by industrial disputes. When the employer and his workmen fail to agree, the workmen, in order to force the employer to meet their demands, may stop work entirely or the employer may "lock out" the workers. Such an interruption is serious enough in peace time, but in time of war it may mean delay in producing vital supplies which are needed by the Army at the front. The Government must be prepared to watch closely the conditions in industry so that if a dispute threatens, it can step in and through conciliation or arbitration help the employer and his men to reach an agreement.

Another way in which man power may be wasted is through lack of means for placing workmen on the kind of work which is most important for the conduct of the war. At the present time the vital need of this country is ships to defeat the submarine and to carry an unending stream of American supplies and men to support the allies on the western front. Suppose that a ship-building company at Newport News, Va., needs riveters to complete the vessels building on its ways. In St. Louis, Mo., there are men working on the construction of steel buildings whose work is very similar to that of the riveters on ship work. The steel buildings are not vitally needed at the present time for the prosecution of the war. The Government must have some way of know-

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1. Find out what are the main classes of men specified in the selective draft.

2. How many of your acquaintances have moved from one line of industry to another since the war began? What reasons did they assign for moving? Was it generally the offer of higher wages? Is that the way in which we apportion our man power in times of peace? Is it the way the French and Germans have organized their man power?

3. "The Germans have succeeded as well as they have because for more than a generation they have been studying carefully the structure and organization of industrial society. Now that they are engaged in work which requires them to utilize all parts of society, they know just where to turn and what to do." This statement is overdrawn, but what is its lesson for us?

ing that these men can be obtained in St. Louis and for sending them to Newport News. Some form of distributing agency, therefore, must be set up, which will be in touch with the supply of labor in all parts of the country and which can help to place that man power where it will be of the greatest use.

This involves, it will be seen, some way of regulating wages so that the men will not lose by leaving St. Louis to go to Newport News. Otherwise they would be tempted to adopt work which might pay them more than the ship work, but which would be far less important for the successful prosecution of the war.

#### GOOD LIVING CONDITIONS MUST BE PROVIDED.

But the problem goes much deeper than this. Let us suppose that through a system of National employment agencies the Government has determined that men for shipbuilding can be obtained in St. Louis and that it has succeeded in sending them to Newport News. But suppose that when they reach Newport News they find that no living quarters have been provided for them. The shipbuilding work has been emergency work, and neither the company nor the community has been able to expand their housing accommodations rapidly enough to meet the needs. The men find that they have to live in insanitary quarters, or if they are married men, that there is no place to put their families. Perhaps even there are no houses for them at all. It will immediately be seen that these men will not be able to remain there under such conditions. If the Nation is to use this man power as it should be used, the Government must provide housing for these workmen.

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1. "War uses the whole nation, and the administration of that nation's industries must be centralized if the best results are to be secured." Find out what the British Ministry of Munitions is and how it is related to Great Britain's industries.

2. Have you heard of any cases of interruption of work in munition plants? How would you define a munition plant?

3. Do you think that the statement concerning the seriousness of interruption of work in time of war is overdrawn? Could an interruption of this sort really result in a lost battle?

4. How would you define "conciliation"? How would you define "arbitration"?

5. "If employers could only realize that the various activities of the workers and of their unions are merely efforts, sometimes wise and sometimes unwise, to get a more secure position in our modern industrial system, they would be more tolerant of these efforts and industrial peace would be promoted." What does this mean? Do you think it is true?

## WASTE THROUGH POOR WORKING CONDITIONS.

There are still other chances for waste. Men can not be handled like machines. Unless provision is made for seeing that their conditions of employment are adequate and fair, that proper measures are taken to safeguard their health, that the sanitary conditions about the shops are correct, and that their hours of work are not too long, their efficiency will be impaired. In Great Britain at the beginning of the war the munitions workers were asked to work tremendously long hours, sometimes as many as 100 or more per week. For a time the output of munitions was increased, but it was found that after a few months the health and morale of the workmen were endangered, and that their output was falling away. It must be within the function of the department handling man power, therefore, to see that efficiency in plants is promoted by proper safeguards of the conditions of work and that the management of the men is sympathetic and intelligent.

## THE NEED OF A SPIRIT OF COOPERATION.

Finally, and most important of all, perhaps, if the workmen are to produce the best and most effective results, if man power is to be raised to its highest efficiency, the men must be enthusiastic and whole souled in their efforts, must realize the meaning of the work which they are doing and must have thorough confidence in the Government and in the Nation's purpose in the emergency. Furthermore, any successful administrative organization in a democratic country must have behind it the public opinion of the Nation as a whole. There must be no suspicion or misunderstanding.

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1. The determination of relative importance of war work is sometimes called a determination of priority. Try to find out the relative priorities of several war commodities.

2. What does this statement mean: "It is highly essential that we establish priorities of labor demand." Why is it essential?

3. Can you point out any cases within your own knowledge where workmen are not being used in the most effective way for the prosecution of the war?

4. The war has shown the necessity of intelligent distribution of men for its prosecution. Would this be equally advantageous in peace time? Tell why you answer as you do.

5. Are there any employment agencies in your neighborhood, either public or private? If there are, arrange to visit one and find out what steps are taken to find unused labor and supply it where it can be employed.

The development of a spirit of cooperation and of a sound public sentiment on labor matters is one of the most difficult problems of the war. After all, our ideas on industrial relationships are not very clear-cut. There is no generally accepted policy concerning the wise and proper relations between labor and capital, and it will be hard work for the Nation to formulate such a policy. There is no person or group of persons who can speak for labor as a whole, no person or group of persons who know the wishes of capital as a whole, and no person or group of persons who can satisfactorily represent the general public. The situation is made worse by the suspicions and jealousies which arise out of the conflicts of the past. The department of Government in charge of the mobilization of our man power has before it a serious task in formulating a national labor policy which will receive the enthusiastic and whole-souled support of the Nation.

#### THE EARLY DAYS OF THE WAR.

It is not surprising that the reorganization of our Nation's industries to meet war needs was attended with considerable confusion. We had long been a Nation unused to war, and our industries were not catalogued and classified with the idea of making them serve war. The various production departments of our Government, all zealous to be of the greatest service to the Nation in the shortest possible time, began placing contracts with individual business houses according to their knowledge of firms and capacities. The Ordnance branch of the War Department placed orders for guns, ammunition, and metal equipment of many kinds with the firms it knew about. The Quartermaster branch of the

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1. In case the United States has no system of registration of workers and plants, what can be done about mobilizing our industrial resources? Will a Federal employment agency system help? Can labor unions help? Can employers' associations? Can chambers of commerce? Can committees of the various industries?

2. It is said that England has used seven hundred million dollars for housing of its war workers. Do you think we are likely to use as much?

3. "One of our great difficulties these days is the concentration which has occurred in the placing of contracts. It has caused congestion of traffic and has seriously delayed production." Give as many reasons as you can why this congestion is delaying production.

4. Name some trades for which we have not a sufficient number of trained men to meet war needs. Do you know of any specific cases in which something is being done about the matter?

War Department placed orders for shoes, clothing, food, and miscellaneous equipment, sometimes with the very same firms and nearly always in the same districts. The Signal Corps did the same with its orders for aeroplanes, telegraph and telephone instruments. The Navy and the Shipping Board used to a considerable extent the same firms and the same districts, although, of course, shipbuilding operations were conducted along all the deep waterways of the country.

The final outcome of it all was that the industries in the State of New York received over one-fourth of all of the contracts for Government material, aside from shipbuilding; three States received over half of the orders, and seven States over three-fourths. This brought about a very difficult situation in relatively small districts of our country, for the total orders placed ran far up into the billions of dollars.

#### WASTE BY EXCESSIVE LABOR MOVEMENT.

It is easy to see how this concentration of contracts increased the probability of wasting the man power of the Nation. Workers had to be moved in great numbers from districts where they were not needed to the districts where war supplies were made. In the undeveloped state of our employment agency systems, this meant that hundreds of employers used their own methods of advertising for workers and of inducing the workers to move their plants. Of course the device most commonly used to induce

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1. "The question of labor supply will not be as important in this country for months to come as it has been in England. Scarcity of shipping limits the quantity of materials which we can send abroad, and therefore limits the quantity it is wise to produce." Does this seem to you a good argument?

2. "There is of course a scarcity of satisfactorily trained labor in certain pursuits. There is also a scarcity of sufficient kinds of labor in districts where contracts are congested. Taking the country as a whole, however, the problem is not one of labor scarcity but of proper labor distribution and effective utilization of our man power." Do you think this is true?

3. Do you know of any industrial plants which maintain training schools for their workers? If so, have they established these schools since the outbreak of the war?

4. "The problem of training our industrial workers has been very much simplified by the decision of the War Department to train the 'specialists' they need from the ranks of enlisted men rather than drawing these specialists from industry." Name some specialists the army uses. Do you agree with the quotation?

them to move was that of offering higher wages. The various firms began to bid competitively for labor. Labor moved from place to place seeking the highest wage.

This movement was increased by the fact that in very few places did the worker find living conditions which were at all satisfactory. Lodgings, restaurants, and places of amusement in these war-industry towns were literally overwhelmed, and yet the local communities hesitated to increase such facilities lest the war should soon be over and money be lost on the improvements.

Conditions of labor in the plants were also frequently unsatisfactory. Many plants were built hurriedly, or hastily remodeled, and safety and sanitation were not properly looked after. In other cases, new processes and new chemicals rendered the work dangerous. Most firms in their haste to serve the Government by turning out war materials did not give thought to the wisdom of setting up systems of employment management which would enable them to select their workers carefully, train those who needed training, safeguard conditions of living and labor, and in general secure a body of contented workmen.

#### THE INCREASE OF LABOR UNREST.

Such conditions of course meant a great deal of restlessness and "labor unrest" among the workers. When men are suffering hardships they do not always stop to think whether anyone is really to blame; they accuse the first person who comes to hand, and the traditional conflict between the worker and the employer

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1. What is meant by "Employment management"?
  2. Scientific study both in England and the United States has shown a direct relationship between nervous strain, fatigue, and diminished production. Show why this is true.
  3. What bearing does strain have on accidents? Name several ways in which accidents have a demoralizing effect on output.
  4. How can a refusal on the part of the employer to listen to grievances presented by his workmen interfere with the output of his plant?
  5. Can you suggest any ways in which the strain produced by the war might magnify the danger of dissatisfaction in factories?
  6. In what way can a scientific study of the capacity of workmen be utilized in making discharge infrequent?
  7. Why do some managers consider that the unrestricted right to "hire and fire" is essential to successful management?
  8. Give some examples of cases where the need for discharge is only apparent, not real.
  9. Why is indiscriminate discharge of workmen wasteful?



led the worker to think in terms of the employer's injustice in not providing proper conditions of living and work. The charge was also spread in part no doubt by German sympathizers, that this is a capitalistic war and that the employers were "profiteering." Perhaps the makers of the charge did not know of the many steps being taken to eliminate profiteering.

On the other hand, the employers felt that they were offering higher wages than had ever been offered before and that both for this reason and because of the national need, output should have increased instead of falling off as it did. The spirit of cooperation so essential to good results in industrial matters lessened in many factories and in many districts. The suspicions and jealousies of the past were not diminished; they were increased. In the first few months of the war, industrial disputes were several times as numerous as they had been in the corresponding period of former years.

#### EARLY EFFORTS TO REMEDY THE SITUATION.

It must not be supposed that our responsible officials did not know how serious the situation was, and were not doing all they could to remedy it. The Council of National Defense set up a "committee on labor" which did a great deal of good work in helping to formulate a National Labor Policy and in assisting to maintain the peace-time standards of good conditions of work. The Shipping Board, the Ordnance Department, the Quartermaster Corps and the Navy Department set up labor bureaus (generally called "industrial service sections") to deal with labor matters connected with the production of war materials, and some

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1. Find out what the National Safety Council is. They will be glad to give information concerning their work.

2. Find out what the Federal Employees Compensation Commission is.

3. What does the expression "industrial relationships" mean to you?

4. How does it happen that no person or group of persons can speak for labor as a whole and that the same thing is true of capital as a whole?

5. What does the expression "National Labor Policy" or "National Labor Program" mean to you in specific terms?

6. "The situation is made worse by the suspicions and jealousies which arise out of the conflicts of the past." What does this mean?

7. Suppose you had been in charge of one of the production departments of our Government in the early days of the war, would you have waited until our industries had been catalogued and classified or would you have placed contracts according to your knowledge and according to the information you could get from others?

eight adjustment boards were established by various agencies whose duty it was to prevent industrial disputes or to settle them if they did take place.

#### THE NECESSITY OF COHERENT ADMINISTRATION.

As time went on, however, it became clear that the Nation's man-power could not be satisfactorily organized by many different agencies working more or less at cross purposes in spite of their most patriotic efforts to work together. Confusion arose among the various production departments of the Government in their policies of adjusting disputes, handling the distribution of labor, safeguarding conditions, and developing a spirit of cooperation. It is easy to see how this might occur. A given business plant might have contracts from all of these production departments, and if their policies on a given matter differed, the broth would be ruined by the multiplicity of cooks, even though the cooks were all good ones.

Whole districts might become confused because of these conflicting policies as readily as an individual firm. The story is told that in a certain district one adjustment board fixed wages of \$5.40 per day for a given grade of workers, and a few days later another adjustment board fixed the rate for the same kind of labor in the same district at \$4.60. It is clear enough that such conflicting decisions would cause great difficulty in every plant which hired this kind of labor throughout the entire district. Accounts flowed in repeatedly of cases where, through their contracting firms, the production departments were bidding against each other for labor and thus contributing to an increase of inefficiency and dissatisfaction.

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1. Find out how our manufacturing industries are distributed. Would it be reasonable to expect that the contracts for war materials would be evenly distributed over the United States?

2. Show how the concentration of contracts meant congestion of transportation facilities. Show how the congestion of transportation facilities meant more or less disruption in all our industries.

3. "The Garfield fuel order was not a fuel order at all; it was a transportation order designed to relieve the congestion of our transportation system." Do you think there is any truth in this statement?

4. We are building both wooden and steel ships, not to mention the composite ships. Find out in what regions the wooden ships are built. Why were these regions selected?

5. "Anything which disrupts industry lessens the output of the worker." Is this true?

## THE INTERDEPARTMENTAL COMMITTEE.

Matters reached such a stage that the production departments themselves urged a change. The Council of National Defense at the request of the War Department, the Navy Department, and the Shipping Board appointed a so-called "interdepartmental committee," whose duty it was to analyze the situation and bring in recommendations for improving it. On December 20, 1917, this committee reported that in their opinion the man power of the country would continue to be wasted unless a national labor policy was worked out and a coherent labor administration given to that policy. They urged that our responsible officials organize or designate for the administration of labor matters an agency comparable to the agencies which were administering our food, fuel, and trade. On January 3, 1918, the Council of National Defense acted favorably upon this report and sent it to the President of the United States, who the very next day authorized the Secretary of Labor to set up a war labor administration.

The Secretary of Labor, aided by an advisory council which he summoned to assist him, began at once to work out his plans.

## THE LABOR CONFERENCE BOARD.

One of the first problems to approach and one which will require continuing attention throughout the war and in years thereafter was that of developing a National Labor Program. The committee on labor of the Council of National Defense had already done some work along this line, and various bits of policy had

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1. There have been wastes of the man power of the country in its war work. Have any of these wastes been due to poor management on the part of factory owners? Have any been due to poor management on the part of the Government? Have any been due to the workers? Can anyone determine who has been mainly to blame? Can it be said that the chief trouble has been a faulty knowledge and control of our whole industrial society?

2. Draw up a list of reasons why there has been a heavy labor turnover in the war industries.

3. It is charged that in some cases the higher wages caused the workers to work a smaller number of days a week. Do you think this could have occurred?

4. Draw up a list of all the reasons you can think of why the war conditions increased labor unrest.

5. Would you include in such a list the general restlessness which everyone feels under war conditions?

been worked out by the production departments of the Government. It was decided to round out this program by calling together five nationally known representatives of workers, five nationally known representatives of employers, and two representatives of the public to work out a series of agreements or understandings on the basis of which labor and capital may work together cordially during the period of the war.

#### THE NATIONAL WAR LABOR BOARD.

This "Conference Board" recommended the creation of a National War Labor Board, to be constituted in all respects like the Conference Board, for the purpose of settling by mediation and conciliation every controversy between employers and workers in the field of production necessary to the effective conduct of the war.

The Conference Board set forth a series of principles and policies by which it is hoped to secure to the employer maximum production and to the worker the protection of his economic welfare, the prime purpose being to prevent strikes and lockouts during the war. In substance, the findings were as follows:

The right of workers and of employers to organize for the purpose of collective bargaining is recognized and affirmed. Existing "open shops" may continue to be open and "union shops" may continue under union regulations, and the continuance of present conditions in this respect shall not be deemed a grievance. Established safeguards for the health and safety of workers shall not be relaxed. Women who perform work ordinarily done by men shall receive the same pay as men. The basic eight-hour day shall apply in all cases in which existing laws require it; in

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1. The owner of a very large plant showed that his contracts with the United States Government would enable him to make a profit of \$250,000, whereas the use of that plant in ordinary business operations would have yielded a profit of a million and a half. There are many similar cases. How do you account for the fact that these cases do not become widely known?

2. What should a war labor administration seek to do? Should it provide for the workers' welfare or should it stimulate production? Are the two antagonistic?

3. Apparently high wages do not necessarily mean increased output. Does this lead you to suspect that wages are only one point and perhaps not the most important point in the relations between labor and capital? What are some of the other points?

4. "Our war preparation has not been as effective as we should have liked." Does this mean that a charge of disloyalty could properly be made against either workers or employers engaged in war industries?

all other cases the hours of labor shall be fixed with due regard to governmental necessities and the welfare of the workers. Maximum production in all war industries shall be maintained. For the purpose of mobilizing labor, lists of available workers shall be constantly furnished to the Department of Labor by trade-unions, employment bureaus, and managers of industrial establishments. The customs of localities concerning labor conditions shall always be considered. The right of workers to a living wage is declared, and the minimum rates of pay shall be sufficient to maintain the worker and his family in health and reasonable comfort.

The Secretary of Labor promptly appointed as members of the National War Labor Board the same men who had served on the Labor Conference Board. The President then issued a proclamation in which he approved the appointments and defined the powers and duties of the new board in full accordance with the recommendations of the Conference Board.

#### LOCAL MACHINERY TO CARRY OUT THE NATIONAL PROGRAM.

Of course a National Labor Program must be carried out in the individual industrial plants and in the local communities. In the individual industrial plants there is much work to be done by way of setting up appropriate local machinery. The American business men are alert and progressive, but relatively few of them have realized as fully as they should that labor is a "factor in production" which is just as significant as finance, or buying, or selling. Just as we have treasurers and auditors and purchasing agents and sales agents, so we should have "employment managers" to supervise and care for labor in production.

#### COMMUNITY COUNCILS.

As for the organization in local communities, the Council of National Defense is promoting a system of "community councils" which will be very helpful in this matter. It is urging the several

- 
1. Show in detail why conflicting decisions of adjustment boards might embarrass a whole industrial district.
  2. Give as many reasons as you can why the Nation's man power can not be satisfactorily administered by many agencies, but requires one agency.
  3. Find out what the British Treasury Agreement was.
  4. Make a list of the ways in which the War Labor Administration can aid our business firms through the promotion of employment management.
  5. Is there a "community council" in your neighborhood? If so, what is it doing? If not, why is not one organized?

State councils of defense to organize as their local agencies, even in the smallest communities, "community councils," so as to mobilize and make available for war purposes the efforts of the whole people. It points out that while the organization of the community council must vary in different localities, the school district is especially well adapted to serve as the basis for this community organization. The school district is nonpolitical, is small enough to promote individual contact with every citizen, supplies a meeting place in each district, is an established center of information and education, has in the school principal or faculty a tried agency through whose assistance community organization can be quickly effected, reaches children and parents alike, and in the cities is to a large extent already in touch with our alien population.

#### THE VARIOUS DUTIES OF THE COMMUNITY COUNCILS.

These community councils will be available for a great deal of work other than that connected with mobilization of our man power, such as community meetings and rallies; patriotic education through the distribution of literature and instruction in the schools; assistance in various ways in food production, food conservation and food administration; the fostering of Americanization, the development of community safeguards against fire, violence, and disease; the promotion of community thrift and community subscriptions; soldiers' aid work in cooperation with the Red Cross, the exemption boards, the postal authorities,

- 
1. What is the Commission on Training Camp Activities?
  2. Some one has said that three essential things must be done: (a) Get a National Labor Program; (b) get local machinery in which it may be carried out; (c) get a good administrative organization to work the program through the local machinery. Are these three elements recognized in the proposed War Labor Administration?
  3. Work out a list of the duties which you think the adjustment service of the War Labor Administration will have to perform.
  4. Work out a similar list for the Information and Education Service.
  5. Why should it be necessary to have a Woman in Industry Service?
  6. Will the United States Employment Service need to know concerning living conditions and wage rates before sending a worker to a plant?
  7. How do the wages paid women compare with those paid men on like work? Great Britain has found it wise to assure women engaged on skilled work the same wages paid the men whom they replace. Why was this regarded as important?



and the Commission on Training Camp Activities; and the execution of various requests issued by the National Government and by State and county councils.

#### THE WAR LABOR ADMINISTRATION.

We must have, first, the National Labor Program, and, second, the local machinery through which it can be carried out; but this is not all. There must be in the War Labor Administration a set of agencies whose duty it will be to organize and promote the administration of this program. The Federal Department of Labor is reorganizing some of its old bureaus and is setting up new divisions or services. Out of these will emerge the War Labor Administration. The chief elements of this War Labor Administration will be these:

(a) An adjustment service, to deal with industrial disputes. The National War Labor Board will perform this function.

(b) A Conditions of Labor Service, to administer conditions of labor in business plants, such as safety, sanitation, and hours of work. Good standards on such matters have already been worked out by the committee on labor of the Council of National Defense, by the National Safety Council, and by the Federal Employees Compensation Commission. It remains to secure nation-wide application of these standards through the activities of the Federal and State bureaus of labor.

(c) An Information and Education Service, to promote sound sentiment generally on labor matters and to provide local machin-

1. The United States Employment Service tells employers that it is best for them to secure all their help through the service; otherwise men may be sent to plant, only to find that the place has already been filled. Does this seem to you a reasonable position for the service to take?

2. What is an organization chart? Can you draw an organization chart of the War Labor Administration?

3. If there are factories in your community engaged in munitions work, has the war necessitated the building of any new houses for workmen?

4. Can you suggest any ways in which a war housing program might make a permanent contribution to society?

5. Can you suggest any labor problems which may occur when the war is over and the Army is disbanded? In what ways would an effective employment agency system be useful in this after-the-war problem?

6. Do you know any industrial plants in which it is fully recognized that labor is as controlling a factor in production as is finance?

ery and policies in individual plants, including such matters as the development of proper employment management methods.

(d) A Woman in Industry Service, to correlate activities of various agencies dealing with this question.

(e) A Training and Dilution Service, whose function it will be to train unskilled workmen where needed for skilled men's work.

(f) A Housing and Transportation of Workers Service, to provide good living conditions for the workers. Congress has already appropriated \$50,000,000 for the building of houses at shipyards and another \$50,000,000 has been asked to provide houses for workers in other war industries. In some cases, not houses but better transportation facilities to regions where houses already exist will need to be provided.

(g) A United States Employment Service, whose function it will be to keep in touch with the labor supply in all parts of the country and to procure men for war work wherever they are needed. The importance of this service has been so well recognized that Congress and the President have made it possible for the service to have over a million dollars to expend before the 1st of July of 1918.

(h) A Personnel Service, which will be charged with the responsibility of selecting the personnel for the War Labor Administration.

#### COOPERATION WITH EXISTING AGENCIES.

This War Labor Administration which is centered in the Department of Labor will not attempt to supplant but merely to supplement the existing agencies dealing with labor matters which have been developed in the War Department, the Navy

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1. Name some of the methods which may be used to adjust disputes between employer and employee when they fail to agree.

2. Suggest some ways in which you think the experience of the war may result in permanent benefit to industrial relations.

3. Why are arbitration boards frequently more successful in reaching a permanent settlement than the regular courts?

4. Give as many reasons as you can why it is wise to have administration decentralized, provided there is concentration of control. Do you think that the geographical extent of the country makes decentralized administration necessary? Is the "community councils plan" in accord with the plan of decentralized administration?

5. "The key to successful war is good administration." What does this mean?

Department, and the Shipping Board. These agencies will all be represented in the policies board of the Secretary of Labor and will thus cooperate with the Secretary in forming administrative policies. In this way, the confusion of the past will be remedied, for all agencies administering labor matters will have a common policy and will act under a single direction.

#### THE OUTLOOK FOR THE FUTURE.

Of course, it must be remembered that a wise solution of these problems can not be reached at once. It will take a great deal of time to get all these new agencies working satisfactorily and with really comprehensive results. Ours is a tremendous country, and the necessary administrative machinery for such a complex problem can not be set up over night. For the most effective results it should have had several years of practice before the war began. The War Labor Administration is, however, a step in the right direction and should operate effectively.

It will be seen that all these new activities are devoted primarily to the work of organizing the Nation's man power for war. It can not be doubted, however, that if they are successful it will be found that much of their service will be found useful in times of peace. The war has emphasized as never before the social character of industry and the benefits which can be gained by a certain amount of social control over its activities. In no field of industry are there greater possibilities of gain through a wise use of social control than in the field of industrial relationships. It is not too much to hope that we shall emerge from the war with a clearer vision of the rights and obligations of both labor and capital and with administrative machinery that will facilitate their cordial cooperation throughout the years of peace.

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DEPARTMENT OF THE INTERIOR  
BUREAU OF EDUCATION  
IN COOPERATION WITH THE UNITED STATES FOOD ADMINISTRATION

# Lessons in Community and National Life



SERIES B

FOR THE FIRST CLASS OF THE HIGH SCHOOL AND  
THE UPPER GRADES OF THE ELEMENTARY SCHOOL

---

PREPARED UNDER THE DIRECTION OF

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## CONTENTS.

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Letter of the President.....	Page. 5
Introduction.....	7

### CHAPTER I.—SOCIAL ORGANIZATION AND THE EFFECTS OF THE WAR.

Lesson B-1. The effect of war on commerce in nitrate. Louisa Nagely, school of commerce and administration, University of Chicago.....	9
Lesson B-2. The varied occupations of a colonial farm. R. M. Tryon, assistant professor of the teaching of history, University of Chicago.....	17
Lesson B-3. A cotton factory and the workers. Gertrude Van Hoesen, assistant professor of home economics, University of Chicago.....	25
Lesson B-4. Feeding a city. Katherine McLaughlin, teacher, University of Chicago Elementary School.....	33

### CHAPTER II.—PRODUCTION AND WISE CONSUMPTION.

Lesson B-5. Saving the soil. E. R. Downing, associate professor of natural science, school of education, University of Chicago.....	41
Lesson B-6. Making dyes from coal tar. W. R. MacLind, of the Sherwin-Williams Co.....	49
Lesson B-7. An intelligently selected diet. Minna C. Denton, University of Chicago.....	59
Lesson B-8. Finding a job. Ernest W. Burgess, assistant professor of sociology, University of Chicago.....	65

### CHAPTER III.—MACHINE INDUSTRY AND COMMUNITY LIFE.

Lesson B-9. How men made heat to work. Franklin T. Jones, University School, Cleveland, Ohio.....	73
Lesson B-10. Telephone and telegraph. W. C. Reavis, Harris Teachers' College, St. Louis, Mo.....	81
Lesson B-11. The work of women. Hazel Kyrk, assistant professor of economics, Oberlin College.....	89
Lesson B-12. Impersonality of modern life. Leona M. Powell, department of political economy, University of Chicago.....	97

### CHAPTER IV.—NATIONAL CONTROL AND FOOD CONSERVATION.

Lesson B-13. The Department of the Interior. Prepared from information furnished by the Department of the Interior.....	105
Lesson B-14. The United States Public Health Service. John W. Trask, Assistant Surgeon General, United States Public Health Service.....	113
Lesson B-15. Price control of wheat. Prepared by the public information division of the United States Food Administration.....	121
Lesson B-16. Why we must help France. Prepared by the public information division of the United States Food Administration.....	129

## CHAPTER V.—CUSTOMS, LAWS, AND FORMS OF GOVERNMENT.

	Page.
Lesson B-17. The development of a system of laws. William H. Spencer, instructor in business law, University of Chicago.....	137
Lesson B-18. How State laws are made and enforced. Glenn Edwards, executive secretary, Public Education Association of Chicago.....	145
Lesson B-19. The commission form of city government and the city manager. Frederick D. Bramhall, instructor in political science, University of Chicago.	153
Lesson B-20. The church as a social institution. Theodore G. Soares, professor of homilectics and religious education, University of Chicago.....	161

## CHAPTER VI.—BUSINESS ORGANIZATION AND NATIONAL STANDARDS.

Lesson B-21. National standards and the Bureau of Standards. E. B. Rosa, chief physicist, Bureau of Standards, and H. G. Moulton, assistant professor in political economy, University of Chicago.....	169
Lesson B-22. Financing the war. Harry A. Millis, associate professor of political economy, University of Chicago.....	185
Lesson B-23. Thrift and war savings. Shailer Mathews, professor of historical and comparative theology, University of Chicago.....	193

## CHAPTER VII.—CONCENTRATION OF POPULATION, INDUSTRIES, AND INSTITUTIONS.

Lesson B-24. Building the industrial city of Gary. G. W. Swartz, assistant superintendent of public schools, Gary, Ind.....	201
Lesson B-25. Concentration of production in the meat-packing industry. Leverett S. Lyon, instructor in the University high school and the school of commerce and administration, University of Chicago.....	209
Lesson B-26. Concentration in the marketing of citrus fruits. Carson S. Duncan, assistant professor of commercial organization, University of Chicago...	217
Lesson B-27. Good roads. Clifford H. Moore, instructor in history, State University of Iowa.....	225

## CHAPTER VIII.—THE WORKER AND THE WAGE SYSTEM.

Lesson B-28. Women in industry. Edith Abbott, Chicago School of Civics and Philanthropy.....	233
Lesson B-29. Labor organizations. F. S. Deibler, professor of economics, Northwestern University.....	241
Lesson B-30. Employment agencies. M. B. Hammond, professor of economics, Ohio State University.....	249
Lesson B-31. Employment management. Ruth Reticker, school of commerce and administration, University of Chicago.....	257

THE WHITE HOUSE,  
WASHINGTON,  
*August 23, 1917.*

TO SCHOOL OFFICERS:

The war is bringing to the minds of our people a new appreciation of the problems of national life and a deeper understanding of the meaning and aims of democracy. Matters which heretofore have seemed commonplace and trivial are seen in a truer light. The urgent demand for the production and proper distribution of food and other national resources has made us aware of the close dependence of individual on individual and nation on nation. The effort to keep up social and industrial organizations in spite of the withdrawal of men for the Army has revealed the extent to which modern life has become complex and specialized.

These and other lessons of the war must be learned quickly if we are intelligently and successfully to defend our institutions. When the war is over we must apply the wisdom which we have acquired in purging and ennobling the life of the world.

In these vital tasks of acquiring a broader view of human possibilities the common school must have a large part. I urge that teachers and other school officers increase materially the time and attention devoted to instruction bearing directly on the problems of community and national life.

Such a plea is in no way foreign to the spirit of American public education or of existing practices. Nor is it a plea for a temporary enlargement of the school program appropriate merely to the period of the war. It is a plea for a realization in public education of the new emphasis which the war has given to the ideals of democracy and to the broader conceptions of national life.

In order that there may be definite material at hand with which the schools may at once expand their teaching, I have asked Mr. Hoover and Commissioner Claxton to organize the proper agencies for the preparation and distribution of suitable lessons for the elementary grades and for the high-school classes. Lessons thus suggested will serve the double purpose of illustrating in a concrete way what can be undertaken in the schools and of stimulating teachers in all parts of the country to formulate new and appropriate materials drawn directly from the communities in which they live.

Sincerely, yours,

WOODROW WILSON.



## INTRODUCTION.

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The Lessons in Community and National Life are intended first of all to lay the foundations for an intelligent enthusiasm for the United States. Our schools have lacked that emphasis on nationalism which has been characteristic of European schools. Even our history courses have been meager and have for the most part treated of periods so remote that pupils in the schools have not cultivated a true idea of the unique characteristics of our national civilization. Though we have a continuous system of free education and a broad view regarding the training of girls, though we have universal franchise and freedom of organization, though our democracy has developed beyond that of any previous historical period, our pupils have been left without knowledge of the fact that these are unique possessions shared only in part by other progressive nations. The Lessons are accordingly filled with concrete descriptions of American institutions, and the significance of these institutions is made as clear as exposition and explanation can make it.

In the second place, the Lessons in Community and National Life aim to bring industry into the schools in a way which will appeal to the intelligence of pupils and will intellectualize all later contact with practical affairs. There is a very legitimate demand urged on the schools at this time that they prepare for industry. If the schools meet this demand only by furnishing the same kind of training in skill that industrial establishments might give, there will be little or no gain to society. If, on the other hand, the schools by appropriate recognition of industry as the expression of human genius and human cooperation can give pupils ideas as well as skill to guide them in later practical life, then the schools will have made a genuine and positive contribution to industrial training. The Lessons are accordingly filled with accounts of how industries originated and how they have evolved, so that the pupil may see that industry is a part of man's intellectual conquest of the world.

In the third place, the Lessons are intended to create a sense of personal responsibility, which can result only when the pupil is



shown how his life is interdependent with the life of other members of society. The child's first experiences with social life are those of a dependent and a consumer. There is little sense of responsibility until one begins to think of himself as obligated to consume wisely and to contribute to production. In these days when every individual in the Nation must conserve and when the responsibility for wise use of everything is a national duty, there are a unique demand and a unique opportunity to give pupils training in civic responsibility.

The method of securing these three ends is to present in the form of short sketches certain descriptions of the facts of national and community life. Each lesson is a unit intended to be read and studied by the pupil. The lesson is carefully prepared by a specialist and is filled with information which will reward the pupil for his reading. Each lesson is also part of a series in which the different lessons approach the same central theme from various angles. The Lessons do not exhaust the theme which they illustrate. At the bottom of each page series of questions are set down in the hope of stimulating the pupils as well as the teachers to carry the methods of the Lessons further. Especially is it hoped that the Lessons will lead to studies of the local institutions which are around the school. A genuine study of community life must take up the familiar environment at the door of the schoolroom. The laboratory for these Lessons is the home environment and the industrial environment of the pupil.

It is hoped that the Lessons will lead teachers and school officers to new efforts in the direction of a vital study of community life and that they will encourage publishers to bring together in available textbook form much material of a similar type.

The immediate purpose which gave rise to the Lessons should also be kept in view. The Nation has need of the help of every child within its borders. The food supply of the world is running low. Our Allies are in want. Our children must learn to save. It is believed that a free people can be appealed to effectively if the case is clearly laid before them. American children are not to be ordered to deprive themselves of familiar luxuries; they are to be told how urgent the need is. The lesson of civic responsibility, if learned in this rational way, will effect the saving that the Nation needs.

CHARLES H. JUDD.

# LESSONS IN COMMUNITY AND NATIONAL LIFE.

## SERIES B.

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### Chapter I.

#### SOCIAL ORGANIZATION AND THE EFFECTS OF WAR.

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The necessity for cooperation is not confined to the individuals of a community, but it extends to all the nations of the world. No country produces everything that it requires. All have needs which must be met by the importation of goods from other countries, often in the farthest parts of the earth. A complex system of commerce has developed and nations have become more and more dependent on each other because the interchange of products encourages specialization of industry. When war begins the ordinary course of trade is disturbed, and many readjustments are required which are exceedingly troublesome. Scientific study has solved some of the most serious difficulties.

Even in its simplest form, the needs of society are many and varied. The pioneer farmers were independent to a great extent of the rest of the world, but their lives were filled with exhausting toil. They used simple hand tools, and their products were limited in quantity and poor in quality. The use of power machinery and the development of trade and transportation came in natural course, bringing relief from the hardest tasks and, with it, greater comfort in home life.

Lesson B-3 begins the study of the factory system and its part in determining the conditions of life. The use of machinery lightened the load of manual labor which man had borne in his earlier days, and it brought about radical changes in his manner of living. Each worker has become a specialist, and the article which he works to produce is made by the cooperation of many individuals. The self-sufficing farmer produced all the goods which he used; the modern worker uses little that he makes and makes little that he uses. He exchanges his labor for money, and his money for goods to supply his wants.

Lesson B-4 introduces the problems of urban life. Men congregated in cities can not produce their own food, and cities could not exist if it were necessary for them to do so. The same sort of cooperation that exists in a factory is required to feed a city. Men cooperate upon farms, vineyards, and orchards to supply the products which sustain life; other men cooperate to transport those products to the cities, and still other men cooperate to distribute them to the consumers.

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#### LESSON B-1. THE EFFECT OF WAR ON COMMERCE IN NITRATE.

By LOUISA NAGELY,

*School of Commerce and Administration, University of Chicago.*

Anyone who has studied geography knows that rubber comes from tropical countries, especially from the forests of the Amazon Valley. He knows that tea comes from China and Japan, that there are certain regions of the world well supplied with coal, and so on through a long list of those things which are needed for modern life and modern industry. The fact that one country can supply the needs of the world for a particular commodity

has resulted in the development of trade between nations, and this trade makes nations very dependent on one another. At the same time exchange between various countries makes it possible for everyone to have a share in all the good things that the world produces. The general lesson that we are all dependent upon one another might have been learned by a study of the industries of ordinary life, but that lesson has been very forcibly brought to everybody's attention during the war, because many of the ordinary forms of trade which existed previously have been entirely cut off or seriously disturbed by the interruption of shipping and by the separation of nation from nation because they are enemies.

#### WHEAT SHORTAGE.

One very striking example of this is the shortage of wheat. Before the war western Europe imported a great deal of wheat from southern Russia. At the present time there are great quantities of wheat stored along the shore of the Black Sea, but this wheat can not be exported; so the world suffers.

#### CHILE SUPPLIES THE WORLD WITH NITRATE.

Another illustration of international cooperation and interdependence can be found in the relation of Chile to the rest of the world during the war. This country, which occupies a narrow strip along the western coast of South America, has what is called a natural monopoly of nitrate. This means that it has a supply of nitrate which is so much greater and so much purer than that of any other nation that everybody imports the nitrate that he needs

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Materials with which teachers and students may supplement these lessons will be found in the following books:

#### FOR OLDER PUPILS.

Henry Clay—Economics for the General Reader. Macmillan.

R. L. Ashley—The New Civics. Macmillan.

L. C. Marshall, C. W. Wright, and J. A. Field—Materials for the Study of Elementary Economics. University of Chicago Press.

Report of the Thirteenth Census of the United States. Especially for the lessons in this section: Classified Index to Occupations.

#### FOR INTERMEDIATE PUPILS.

A. W. Dunn—Community Civics. D. C. Heath & Co.

William L. Nida—City, State, and Nation. Macmillan.

Richman and Wallach—Good Citizenship. American Book Co.

#### FOR YOUNGER PUPILS.

Mabel Hill—Lessons for Junior Citizens. Ginn & Co.

Readers by Carpenter on various incidents, such as "How the World is Fed." American Book Co.

from Chile. It happens that nitrate is of great importance both in the peaceful occupation of agriculture and in making gunpowder for war.

There is a great deal of nitrogen in the world, but it is difficult to get. The atmosphere is made up of nitrogen to the extent of about 80 per cent, and there is a great deal of nitrogen in the soil. Plants and animals have nitrogen in their bodies and need it for growth. In spite of the fact that nitrogen is everywhere present, it can not easily be separated from the other substances with which it is mixed.

#### THE SOURCE OF THE SUPPLY.

There is a belt of land about 500 miles long and 10 miles wide lying about 15 miles east of the coast of Chile between the coast range and the Andes, where great quantities of nitrate are deposited. There is very little rainfall in that region. The nitrate therefore has not been washed away. Many theories have been advanced to explain the formation of the nitrate deposits. Some believe that rocks have been dissolved and that water brought the nitrate to the hollow ground, after which the water evaporated, and since there is no more rain the nitrate has remained behind.

Others believe that electrical discharges in the Andes Mountains have produced these deposits from the air. There is some ground for the acceptance of this theory, because science has developed ways of extracting nitrogen from the air through the use of powerful electric currents. At all events, the deposits are there, and the whole world goes to Chile for nitrate.

#### NITRATE USED AS A FERTILIZER.

One important use which is made of nitrate is in agriculture. About 100 years ago a Scotchman living near Iquique sprinkled some of this nitrate over a part of his garden. He found that that part of the garden flourished, while the rest did not. He sent some of the soil back to Scotland, where it was analyzed, and in this way the value of nitrate as a fertilizer was discovered. Ordinary plants

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1. Make a list of some of the imports which you use every day. Tell from what place each article probably came.

2. "International trade helps us satisfy our wants in two ways. It lets us get commodities we could not otherwise get and it lets us get them more cheaply." Give illustrations.

take the nitrate out of the soil, and after a number of crops have grown on that soil it is necessary to put more nitrate in, or the impoverished soil will not be able to produce new crops. It has been found, for example, that an acre of land which will produce only 20 bushels of wheat without fertilization will yield 32 bushels if nitrates are spread on the soil. In the same way the production of rye can be increased from 15 to 25 bushels per acre, and the production of potatoes from 130 to 210 bushels per acre. Before the war Germany used every year 600,000 tons of nitrate for fertilizer.

#### NITRATE ESPECIALLY NEEDED IN WAR.

The other use to which nitrate is put is that of manufacturing high explosives. Nitric acid, which is one of the most powerful acids known to the chemist, is produced from nitrate. There are other manufacturing processes besides the making of explosives which require nitric acid. Before the war Germany used 300,000 tons of nitrates from Chile in her manufacturing operations, especially in making munitions. Other countries also use large quantities. In 1890 Chile exported something over a million tons. In 1911 more than two and one-half million tons were being sent away, and 100 establishments along the narrow strip produced material for shipment.

#### DISTURBANCE OF CHILE'S COMMERCE.

It is easy to understand what happened at the opening of the war. There was a great disturbance in the trade between Chile and other nations. Approximately one-third of Chile's exportations had been going directly to Germany, and when Germany could no longer import this material from Chile, because of England's blockade of Germany, the disturbance was felt very keenly in both countries. The laborers in Chile who had been employed in preparing the nitrate for exportation were suddenly thrown out of work. The Government of Chile tried to provide at public expense for the employment of those men. They were taken to other parts of the country and used in agricultural enterprises. In doing this the Government was seriously handicapped because

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3. Bananas can be raised in hothouses in Canada. Would Canada be wise to get her banana supply in this way?

4. People talk of "deficit" and "surplus" wheat countries. Name some representatives of each class.

COMMERCE IN NITRATE.

one of its greatest sources of revenue is the taxes imposed on nitrate.

GERMANY'S DIFFICULTIES.

The difficulties that Chile encountered were, however, far less vital to the existence of the country than the difficulties that Germany encountered. Her agriculture and her manufacture of munitions made it absolutely imperative that she have nitrate. At the opening of the war Germany had a considerable supply of nitrate on hand, but as soon as the war began it made great inroads into this supply. It takes from 3 to 10 tons of nitric acid to make 1 ton of explosives. Germany was using, after the war was well under way, 400 tons of explosives every day. With regard to her agriculture the situation was hardly less acute. If she could not get nitrate, her crops would be reduced 25 per cent, and this furnished perhaps as serious a problem as that of supplying explosives.

SCIENCE TO THE RESCUE.

What Germany did under these conditions was to turn to the more expensive method of making nitrate out of the air. German scientists and engineers were put on the problem of developing factories which would make nitrate. It had been known for years that powerful electric currents would draw nitrogen out of the air and make it available for commercial purposes. This method was originally tried at Niagara Falls and in Norway, where there is abundant water power.

Certain chemical methods also can be employed. These methods had never been extensively used because they are so expensive as contrasted with the importation of nitrate from Chile. But the expensiveness of the process did not stop Germany. She must have the material at all costs. It is said that she has invested since the beginning of the war not less than \$100,000,000 in equipment to supply nitrogen. It is said that her engineers spent a year and a half of work night and day equipping the factories and getting them in working order.

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5. What other materials besides nitrate are used in unusually large quantities in war?

6. Are there many natural monopolies in the world? Can you name any commodities which are produced exclusively in your State? In the United States?

7. Is all the territory of Chile a nitrate region?



## COMMERCE READJUSTED ITSELF.

With the later developments of the war the condition in Chile has been brought back to something like what it was before 1914. England and her allies, who retain command of the seas, have greatly increased their importations of nitrate from Chile and now all except those works which are owned by the Germans are again in operation, and Chile has large contracts to supply the allies with this material.

## HOW NITRATE IS EXTRACTED.

It may be interesting to describe briefly the process by which the nitrate is extracted. The raw material which is found in the deposits is called "caliche." It is not hard to mine, because it is close to the surface of the earth. In some places there are layers of dust and rock 25 or 30 feet deep, but in other places the deposit is within a few inches of the surface of the ground. The deposit is from 1 to 6 feet in thickness. It contains not only nitrate, but also other substances, such as salt, borax, and iodine. It is broken up by boring into it and exploding a charge of gunpowder. The broken pieces are then crushed and carried to great tanks, where boiling water dissolves the nitrate and separates it from the other substances.

Since there is no water in this region, the development of the industry has required the piping of water from the distant Andes Mountains. Some of the water is used several times over. Before the pipes to the mountains were built, salt water from the sea had to be brought in and distilled, and sometimes fresh water was brought in ships.

The tanks which receive the caliche are made of iron and have a capacity of about 70 tons each. They are 32 feet long, 9 feet wide, and 8 feet deep. An ordinary plant has from 20 to 30 tanks.

After the boiling water has taken up as much nitrate as it can carry, it is drawn off into other tanks. Since the solution contains a few of the more easily dissolved impurities other than nitrate, it is necessary to introduce substances that will help to remove the impurities. For this purpose wheat flour is sometimes employed. After the solution has been purified, it is drawn off into tanks placed 10 or 12 feet above the ground to permit the circulation of air. In the final tanks a part of the water evaporates and the nitrate crystallizes. It then has much the appearance of rock salt. It is now shoveled from the tanks into cars and



allowed to dry for several days. After this, the material is packed in bags which protect it from the air, because it absorbs water very rapidly.

#### WASTE.

The problem of disposing of the waste from the works is a serious problem, because the quantity sometimes amounts to one or two thousand tons a day. The waste contains a small percentage of nitrate. As the supply runs out it is not unlikely that some future generation will find it profitable to rework the piles of waste that have been thrown out.

#### THE CIRCLE OF TRADE.

If one follows the nitrate away from Chile one has a very interesting example of the complexity of modern trade. The nitrate goes, for example, to the United States, which is now Chile's best customer, and is used for agriculture and manufacturing. Goods are sent back to Chile in payment for nitrate. Only a small part of what is sent back in this way goes to the region from which the nitrate was taken. Some coal and some machinery go directly to the pampa. A good share of what is sent back in payment for the nitrate goes to other parts of Chile. The people who live in Chile, but not in the nitrate belt, support themselves by various occupations, chief among which is the production of food for the workers in the nitrate region.

The nitrate belt produces nothing in the way of food. It is an arid desert region. The lack of rain makes it necessary to bring the water which is used in extracting the nitrates; but the people in this belt would not want it to rain, because the water would wash away the deposits on which they depend. To this desert food and water and coal and machinery must be brought from other parts of the world.

#### TYPICAL OF COMMERCE.

It would hardly be possible to find a better example than this of what is involved in trade. Chile has a natural monopoly which ultimately becomes so connected with the life of the whole world that every civilized country is interested. This shows the extent to which interdependence has grown up in modern life.

Capital from every great country is interested in the Chilean pampa—from Germany, Great Britain, Belgium, France, Austria, and the United States. The Republic at the extreme southwestern

end of South America is involved commercially in the war, though politically neutral. Indeed, in some ways the people of that remote country have suffered more than we.

#### WAR AND THE NITRATE FIELDS.

This is not the first time that Chile has felt the effects of war through her nitrate deposits. In 1879 there was war between Chile, Peru, and Bolivia. One of the chief causes of this war was a dispute about the ownership and control of the nitrate deposits. The war lasted until 1883 and ended with Chile in possession of the nitrate fields.

#### THE STUDY OF COMMERCE.

This lesson has not been given merely for the sake of showing how the world's supply of one important substance is procured. Trade in nitrate is a type of what is happening with every kind of commodity. Usually the case is not so clear, and the student who would understand the world in which he lives must look more carefully for the lines of trade and for the influence of nation on nation and of war and peace on production and exchange.

It is only by looking at the more complicated cases through some such clear-cut case that one can begin to understand the ways in which men have become dependent on each other.

We shall have an opportunity in the next lesson to see how for a time a few pioneer farmers were independent to a great extent of the rest of the world. But even they began at an early stage to cultivate the forms of cooperation that have resulted in the modern ways of living.

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LESSON B-2. THE VARIED OCCUPATIONS OF A COLONIAL FARM.<sup>1</sup>

In colonial times there was very little trading. The roads were few and in poor condition. There were no railroads and no opportunities on many of the farms to make use of boats and water transportation. People had to be independent, that is to say, self-sufficing. The farm was not merely a place for raising live stock, poultry, grain, vegetables, and fruit; it was also a manufactory of almost everything needed in daily life. The farmer and his family produced the raw materials and also made them into useful articles.

## THE MANY TYPES OF THINGS MADE.

Generally speaking, these articles included: (1) Wearing apparel and household textile supplies; (2) household implements, utensils, furniture, necessities, and comforts; (3) farming implements, building materials, and general supplies. A few things were purchased from occasional traders who came to the farm. A few things were purchased in the towns on the infrequent visits of the farmer to the more densely settled districts. Thus the scythes were made at the forge, and only the handles were made on the farm. Saws and axes were imported from England, or later from those regions where iron was abundant and easy to secure. Not all metal articles were imported. The soft pewter metal which went into the forks and knives could often be worked into household utensils in the domestic factory—the home.

A list of the articles made on a colonial farm is bewildering in its variety to a modern reader. Space will not permit a detailed and systematic account of how all of the necessities of life were supplied.

Some notion of the complete picture may be constructed from an account of the following typical activities: (1) The making of lumber and furniture; (2) the making of tools with which to work the farm; (3) the making of tools required to deal with the products of the farm; (4) the making of lighting materials; (5) the making of leather articles such as boots, shoes, breeches, hunting shirts, moccasins, leggings, gloves, and caps; and (6) the

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<sup>1</sup> Prepared by R. M. Tryon, assistant professor of the teaching of history, University of Chicago.

This lesson shows the manifold wants of man even under simple conditions. It shows how in earlier days men met their wants in a self-sufficing way. This is in sharp contrast with modern cooperative ways of meeting wants.

making of cloth from wool, cotton, or flax. These different kinds of activities will be outlined briefly in the order given.

#### LUMBER AND SHINGLES.

Before the construction of sawmills, and to some extent even after sawmills were in operation, it was necessary for the farmer to make the material entering into the construction of his house and other buildings, and into the making of the chairs, tables, and beds which furnished his home.

The first houses in a new settlement were built of logs hewn from the forest trees. Later the hewn logs were replaced by lumber, the product of the "saw pit." This saw pit consisted of a platform and a pit, dug into a hillside. Here with a handsaw two men, one above and the other below, were able to cut up logs so as to produce about 100 feet of boards in a day. When one thinks of the contrast between the labor involved in making boards in that way and at a modern sawmill, one understands why the coming of machinery led to a change in method of work and indirectly to new methods of living. Rough clapboards were used to cover the first round or hewn log houses. Later, shingles were rived by hand from "bolts" or blocks of wood. At first the shingles were used just as they came from the frow, the instrument used in the riving. Later they were shaved and made perfectly smooth. A man could shave about 1,000 shingles in a day. Wooden hinges and door latches were made, and also hand-wrought iron nails to be used in the construction of the house and of the furniture. We read that it was not uncommon for the country people to erect small forges in their chimney corners and to make nails in winter and on evenings when little other work could be done.

#### FURNITURE.

The first settlers brought some furniture from Europe with them, but as they migrated inland it proved to be too bulky to

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1. Name all the different kinds of transportation used nowadays. How many of these existed in colonial times?
  2. "The colonists characteristically settled along the seacoast or along rivers." Why?
  3. Did they have the same kinds of boats and wagons then as we have now?
  4. What is the difference between dirt roads and macadam roads? What are asphalt roads?

move, so that the inhabitants of each new settlement were compelled to make within their homes such articles as tables, stools, cupboards, and bedsteads.

One way in which the parts of the furniture were fitted together can be illustrated by describing the making of a three-legged stool, which was a common article of furniture in the colonial home. Three holes were bored in the piece that was to be the top of the stool and round legs were driven firmly into the holes. The boring of the holes was done with an auger which, like the other metal tools necessary in the household, had been brought from England or purchased from a trader. When the legs had been firmly driven into their places they were sometimes made secure by wrought-iron nails. In the larger pieces of furniture wooden pegs were frequently used instead of nails. Even bedsteads and tables were often made in the same manner as stools.

#### FARM IMPLEMENTS.

The farmer not only made his house and furniture from lumber, shingles, and nails of his own manufacture, but he had to make the implements with which to work his farm. These consisted of vehicles of transportation, plows, harrows, pitchforks, handrakes, shovels, ax handles, hoe handles, scythe-snaths, singletrees, doubletrees, clips, clevises, laprings, ox yokes, and harness for his horse if he chanced to have one. All manner of makeshifts were often necessary to supply some of these articles. For example, horse collars were made of corn husks; hames of crooked roots; clips, clevises, and laprings of hickory withes; ox yokes of bent hickory wood; traces and bridles of twisted deer hide, and pitchforks from forked boughs or antler horns.

The first vehicles for transportation were nothing more than log boats and sleds, wheels being luxuries which could not be provided. Later, crude but serviceable wagons were made with wheels sawed from the trunks of trees. Axles were made from

5. Why did the colonial people not make better roads for themselves?
6. Did the people on the colonial farm make everything they needed?
7. What is meant by "self-sufficing," as applied to colonial life? Are modern city families self-sufficing? Modern country families? Are there any regions or countries now in which families are self-sufficing?
8. Find out in what ways the life of the southern mountaineer of to-day resembles the life of the colonial family.
9. Where did the colonial family get the money with which to buy things from town?

hickory or white oak, and a coupling pole of like material connected them.

Plows and harrows were made on the farm with little difficulty. At first the harrows had wooden teeth and the plows wooden moldboards. In the course of time it was possible to procure from the blacksmith shop iron teeth for the A-shaped harrow and for the point, share, and wing of the plow. With the introduction of the ironmaker's trade came the beginnings of a new era. The farmer had only to make the beams for the harrow and the wooden beam, handles and moldboard for the plow. He began to be dependent on someone else for the metal parts. Cooperation had begun. It resulted in better implements and also in a stronger bond between members of the community.

#### MILLS OF VARIOUS KINDS.

Besides making the implements with which to till his farm, the farmer and his boys had also to make the tools with which the products of the farm were brought into condition for use. They made their own cider mills, cheese presses, spinning wheels, flax brakes, swingling knives, wool combs, looms, and implements used in making hominy and meal.

Here again the contrast with modern methods is impressive. The farmer of to-day sends his corn to the miller, who does very much more cheaply and rapidly and easily with power machines the work which in those earlier days was done by hand with simple devices that the family could construct. The secret of the increased cheapness and rapidity lies in the fact that the modern miller has, through machinery, harnessed the forces of nature, and makes them do his work for him.

We shall gain a clearer view of the effort that had to be invested in preparing food if we take up in detail the preparation of hominy from corn. This was done by means of the "hominy block." The block was made of a large piece of wood about 3 feet long, with a

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10. "The colonial farm was both a farm and a factory." Is the same true in every respect of a modern home in a town?

11. Find pictures of the machinery which is now used in making lumber products. Many of the articles mentioned throughout this lesson are illustrated in the dictionary or in an ordinary encyclopedia.

12. How commonly are shingles now used for roofs? Why are other materials employed instead of shingles?

13. Why are there so few log houses to-day in a modern city? Why in a large city are there so few frame houses?



bowl-shaped hollow burned in one end. The shelled corn was put into this bowl and cracked with a pestle. Sometimes a simple hand pestle was used. In the fall of the year, while the corn was soft, the block and pestle did very well, even for making fine meal for johnnycake and mush, but the work was slow when the corn became hard.

A kind of power pestle or sweep was sometimes used, harnessing the elasticity of nature and thus lessening the toil of pounding grain for meal. For this sweep a pole of some springy, elastic wood, 30 feet long or more, was used. The larger end was wedged under the side of the house or under a stump. A supporting fork was placed under the pole about a third of its length from the butt. This was so arranged as to raise the small end of the pole about 15 feet from the ground. From the small end was hung a heavy piece of wood 5 or 6 inches in diameter and 8 or 10 feet long. The lower end of this was rounded so as to serve as a pestle. The long, springy trunk to which it was fastened above tended to overcome the force of gravitation and to raise it from the bowl below, in which the grain was placed. The worker used this great pestle, pulling it down and crushing the grain in the hollowed block. He then released the pestle, which was raised by the sapling to which it was attached above. Sometimes two workers used the sweep, crushing the grain more effectively by their combined strength.

The hand mill was also used and made better meal than the mortar or grater. The hand mill was like that used by the Indians and other primitive people. It was made of two circular stones, the lower of which was called the "bed stone," the upper one the "runner." The upper stone was turned with a handle or staff, and the grain between the stones was ground to flour.

Water mills and windmills for grinding grain were among the first mechanical conveniences set up by the colonists. Food is an absolute necessity and much thought would naturally be given to finding devices for procuring it more cheaply. The work of preparing grain could of course be done much more easily and

14. Have you ever seen a log house? Are there any parts of the country where they are still common?

15. Why do we not have small forges in our chimney corners nowadays, so that we might spend our evenings usefully in making nails?

16. Where did the furniture in your home come from? Where did the various woods that went into it come from?

17. Why were the colonial settlers able to bring bulky furniture from Europe but not to move it inland with them?



cheaply when the winds and waterfalls were harnessed to help man. The primitive stone mills and the pestles did not disappear, however. Not everyone lived near a waterfall and the wind could not be depended on to blow when it was needed. It is easy to see that such a dependable machine as the steam engine would have been welcomed heartily. It did come later. Then primitive methods quickly disappeared.

#### CANDLES.

The colonists had to provide themselves with lights for their evenings. Kerosene, gas, and electricity were unknown, and less satisfactory means had to be used. One such means was candlewood, which was nothing more than the knots and hearts of resinous pine trees. Then, too, rushes were used after being dipped in tallow or grease. Oils from fish, bear, whale, and moose all did good service. Most important of all, however, were the candles made from the tallow of the berries of the bay, a bush found in all the Colonies, and candles from animal tallow, whale oil, and honeycomb wax.

Bayberry candles were made from the wax or tallow extracted from the berry of the bay, a plant which grew abundantly in the neighborhood of the sea. The berries were gathered late in the fall and thrown into a kettle of boiling water. The fat melted out and floated to the top of the water and was skimmed off. On cooling, this tallow was melted over again, to refine it. Refined bayberry wax has a transparent green color. Candles were made of this tallow just as they were made of the tallow from the animals killed on the farm. Before the advent of candle molds, which made it easier to make candles, and before the coming of the itinerant candlemakers, candles were made by dipping. Wicks were prepared and dipped into hot wax or tallow. They were then lifted out and the wax allowed to cool and harden. The dipping was repeated until enough wax had hardened around the wick to make a usable candle.

All this is very different from the present methods by which business concerns set up large machines or factories for making

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18. Why did they use wooden pegs instead of nails to fasten parts of furniture together? Have you ever seen any furniture made in that way? Why should any furniture be made in that way now?

19. Why are there so many furniture factories at Grand Rapids, Mich.?

20. Why did they use sleds instead of wagons at first? What kind of wheels were first used for their wagons?

gas or electricity and then install gas mains or electric wires to carry means of lighting to our houses. Sometimes we say that the colonial way, where each family was largely self-sufficing, was an "individual" way of meeting wants, and our way, where great numbers of people contribute to meeting even a single want, is a "social" way. Our way is certainly a more efficient way.

#### LEATHER ARTICLES.

The hides of animals killed for food on the farm, or of the deer, squirrels, raccoons, rabbits, beavers, and foxes shot or trapped in the woods, were used for many purposes. Deerskins were made into hunting shirts, breeches, coats, leggings, and moccasins. Gloves and mittens were made from the skins of squirrels and beavers, caps from the skins of raccoons, bears, foxes, cats, rabbits, and woodchucks. Bearskins were made into beds and bedding. From the deerskins and cowhides, moccasins, shoe-packs, and shoes were made. The preparation of the material and the making of all of these articles were done on the farm, the work being the duty chiefly of the men and boys.

Tanning the hides was a long, laborous process. They were first thoroughly dried and then thrown into a vat of strong lye. The lye caused the hair to loosen and fall off. The skins freed from hair were then placed in another vat of liquid made from black-oak bark, and were allowed to remain several months. When taken out of this they were scraped and softened with bear's oil. They were then ready to be made into shoes, boots, and harness.

The tailoring of the leather suits usually fell to the male portions of the family, since the hard material was rather difficult for the women and girls to handle. Large needles or shoemakers' awls were used in the sewing process. The thread was made either of the sinews from the legs of the deer or by cutting a long strip from the deerskin. The latter was called "whang." It was cut as small as possible so that it could be used as thread in the awls or needles. Although the products of this crude tailoring were often rough and uncomfortable, especially after getting wet and stiff, they were very useful in protecting their wearers.

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21. What are horse collars made of now? Why did the colonial farmers use corn husks to make them?

22. Why did the colonial farmers not set up a blacksmith shop immediately when they arrived in this country, and let one of their number spend his time working on iron products for all of them?

## CLOTH.

While the farmer and his boys were busy supplying leather clothing, the wife and daughters were manufacturing cloth to be used for wearing apparel and as household textile supplies. Cloth was made from cotton, wool, or flax. The making of these involved the preparation of the raw material for the spinning wheel and loom and bleaching and dyeing the finished products.

## TRANSITION TO FACTORIES.

These descriptions indicate something of the variety of the products of the colonial home. They show that the colonial family was largely self-sufficing. They also show that modern ways properly used mean a fuller life. The members of the colonial family had to do too many different things to do any one thoroughly well; so that the quality of their products was not equal to the quality of the goods produced to-day. Nor did they produce as great a quantity as the same number of people with the same tools could have produced had each been able to specialize on a different occupation and then trade his products with others. Trade and transportation have enabled us to specialize to-day, so that we can secure better quality and greater quantity.

Trade and transportation are not the only reasons for this improvement. We have harnessed the forces of nature. We have power machinery. Machines work more precisely than people can and turn out vastly more goods. Our business men have set up a great number of special factories, each making a single kind of article. These factories can make the articles so much better and so much more cheaply that one by one the trades formerly carried on in the family have been taken over by the factories. The effect of this change on the life of the family we shall learn more fully in later divisions of this course.

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LESSON B-3. A COTTON FACTORY AND THE WORKERS.<sup>1</sup>

When one talks about a factory he ordinarily refers to a building and machinery. One remembers, to be sure, that there are people who work in the factory, but these people are usually thought of as belonging somewhere else—in their homes or on the street. As a matter of fact, the modern factory has a great influence on the lives of the people who work in it. That influence may be understood better after a view of what goes on inside a factory. The situation inside the factory is very different from that in the colonial home where each worker followed the whole process of making things from beginning to end.

## WHEN FACTORIES FIRST CAME.

It was pointed out in the last lesson that in earlier days in this country there were no factories. People lived in scattered towns which were half rural or, as the Indians were driven back, families lived quite apart from their neighbors in the open country. They provided themselves with the things they needed by home industries.

Then came machinery driven by power. The rate at which materials could be made into useful things was so much increased by the use of power that the place where power was to be found became a center around which people gathered and lived. In New England the waterfall became an attraction for a settlement which rapidly grew into a city.

It was in 1771 that spinning began to be done by water power in England, and at about the same time power factories began to be built in New England. In England when the steam engine came into use for spinning, in 1785, centers of population grew up where fuel was most easily accessible. Much later coal became an important factor in American life, but for a long time it was the waterfall that explained the factory city.

These dates are not to be considered merely as dates when something happened in the world of machines and spinning. They mark the time when a great transformation began in men's way of living.

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<sup>1</sup> Prepared by Gertrude Van Hoesen, assistant professor of home economics, University of Chicago.

The cooperation of many people, the special skill contributed by each one, their interdependence on each other and on social organization are here shown. A beginning is made of the study of the part which the factory system plays in determining conditions of living.

## THE FIRST STEPS IN MANUFACTURING COTTON.

We shall take for the purpose of our study a cotton mill in a New England town where cloth is made from the raw cotton shipped from the fields of the Southern States. Let us begin with the cotton as it comes to the mill, not forgetting that it has had a long journey coming to the place where machinery driven by power can change it into something other than it is.

The cotton arrives in big bales, which are opened in the factory, and the loose cotton from many bales is mixed in order to get a uniform quality. The mixing may be done by hand, but it is often done in a machine called a "bale breaker," which at the same time begins the cleaning of the fiber.

The cotton next passes through machines called "scutchers," where it is beaten in order to remove all loose dirt. It is then put into machines called "pickers," which continue cleaning, and deliver it in sheets like cotton batting.

The cleaning is completed by a machine known as a "carder." This combs out the fibers, removes all sticks, leaves, and remaining foreign particles, and straightens and disentangles the fibers.

From the carding machine the cotton fibers are drawn off in a round rope or ribbon about an inch in diameter called a "card sliver." Sometimes the carding process is repeated or the card sliver is put through a "combing machine" which takes out the short fibers and arranges the long fibers so that they lie in the same direction.

## MAKING THE THREAD.

The fibers of cotton which have been carded and combed are now taken to a "drawing machine" where from four to eight slivers are drawn together. This process of arranging the fibers

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1. "It costs a great deal to build a factory and put it into operation." Make as long a list of these costs as you can.

2. We say that "the industrial revolution" began the latter part of the eighteenth century and is continuing to the present day. What does this mean?

3. We contrast the "domestic system" with the "factory system." Draw up a list of the differences from the point of view of the worker. Make another list from the point of view of the consumer or user of goods.

4. Why did the inventions connected with spinning come in about the middle of the eighteenth century? If Hargreaves had died in his infancy, do you suppose this invention would never have been made?

and drawing them out into finer and more even slivers is carried on by a number of machines called "drawing frames" which keep pulling out the card sliver until it is a slender collection of fibers ready to be twisted into a thread by the spinning machines.

The spinning machine is sometimes called a "mule;" sometimes it is of a form known as a "ring frame." The mule is a device which was invented in England. It is nothing but a power-driven form of the old-fashioned spindle which was used in hand spinning before the time of machinery.

The first improvement in the hand spindle was made in 1764, by a man named James Hargreaves, a poor laborer of Blackburn, England. This device was improved by a number of subsequent inventors, especially by Samuel Crompton, of Bolton, who named his machine the "mule." The ring frame was invented a little later by Richard Roberts. Both of these devices take the fibers that have been drawn out by the drawing frames and twist them into cotton thread.

The improvements which have been made in recent years may be understood when it is stated that a single mill operator can at the present time take care of 125 spindles in operation. In recent years, too, the rate at which the spindles rotate has been increased until it has reached what is regarded as the probable limit—namely, 10,000 turns a minute. The contrast between the older devices and those now in use is very impressive if one remembers that in the early days the woman turned her spindle with a foot treadle and used a single spindle to which she fed the fibers by hand.

#### WEAVING.

When the thread has been made by the spindles, it is wound on bobbins and carried to the weaving machines where it is turned

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5. Why did they use coal so much sooner in England than in this country for power factories?

6. What was the "great transformation in men's way of living" that happened when power factories supplanted home production?

7. Why do we ship cotton from the South to New England cotton mills? Why not build a cotton mill on each cotton plantation?

8. What is a cotton plantation?

9. Describe the method of shipping cotton from the South. What part of the plant do we use in textiles?

10. Why is it that cotton in different bales is often of different qualities?



into cloth. We leave now the spinning department of the factory and go to an entirely different set of machines. Indeed, the spinning and weaving are usually done in entirely different buildings or even in different factories.

The machine that does the weaving is called a "loom." It interlaces the threads with each other, one set running at right angles to the other. Anyone who looks at an ordinary piece of cloth will see that there are two sets of threads. One set is known as the "warp" and runs lengthwise of the cloth. The other set runs back and forth between the fibers of the warp and is known as the "weft" or "filling." Sometimes different grades of thread are used for the warp and the weft. The threads made from the longer, better fibers are used for the warp, while the shorter fibers serve for the weft.

The parts of the loom are designed to hold the threads in such position that they can be interlaced and driven together until the closely woven threads come out as cloth.

One part of the weaving machinery which immediately attracts the eye of the visitor is the little shuttle which carries the weft back and forth between the threads that make up the warp. The warp appears as a series of parallel threads held in position while the shuttle plays back and forth between them. The alternate threads of the warp are held in position by a part of the loom which is known as the "heddle." This part of the loom can be moved up and down so that each alternate thread will at one moment be above the shuttle as it travels and the next moment below. The heddle is raised and lowered as the shuttle is thrown back and forth between the threads of the warp.

Formerly the shuttle was thrown by hand, but in the automatic looms used in modern factories all of this work is done by

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11. If you were going to build a cotton factory, how would you decide how many scutchers to have for each bale breaker?

12. Why are there now so many more steps in preparing the fiber for the spindle than in earlier times? If the spindles in the modern factory rotate so much more rapidly than domestic spindles, how can one worker take care of more than one spindle?

13. What proportion of the world's cotton is raised in the United States? Information on a subject like this can be found in certain Government reports.

14. What proportion of the world's cotton cloth is woven in the United States?



machinery. Here again the single workman can manage a number of machines. His chief business is to see that the threads do not break and that the machine is constantly supplied with the threads that go into the cloth. Indeed, it is no longer necessary in the most completely equipped factories for the operator to watch for breaking threads, because the machinery has been made automatic and will stop whenever anything breaks. His business is merely to see that the machine is fed with thread. A single operator can attend to as many as 24 or even 28 automatic looms.

These looms have, in addition to the parts above described, devices for controlling each of the threads of the warp and weft so that any desired pattern will appear in the cloth.

#### DYEING AND FINISHING.

Dyeing and finishing are further steps that enter into the manufacture of cloth and are intended to make the cloth more attractive to customers. Everywhere that we take up the study of human beings and their wants we find there is a demand for the beautiful as well as the useful, and much of the effort of a manufacturing establishment is expended in trying to satisfy the demand for beautiful things.

#### SPECIALIZATION AND INTERDEPENDENCE.

While reading about all these complicated steps one should not think merely of the machinery and the cotton. Each machine is tended by a man whose duty it is to do just one thing—to card or comb or run the picker or scutcher. Each man is a specialist in one line of work. He becomes very rapid and skillful in this one task.

We should also learn to think of the factory as an illustration of the principle that in modern life we are all dependent on one another. The factory as a whole is dependent on the cotton grower far away. It is dependent, too, on the manufacturers of

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15. Describe a loom and the process of weaving. Look up a picture of a loom.

16. Take a piece of cloth and ravel it out at the edges to see how the threads are put together.

17. Why should manufacturers bother to make more than one kind of cloth? Does one factory make several kinds?

18. What is meant by saying that the worker at the loom is a specialist?

19. Why should the cotton manufacturer in New England take any interest in the campaign to exterminate the boll weevil in the southern cotton fields?

the looms and carders and other machines which it uses; on the lumbermen and miners who prepared the raw material out of which its machines were made; on the railroads and steamships which bring its raw materials and carry away its finished products.

Inside the factory one worker is dependent on the other. Unless the carder does his work, there will be no fibers to spin. Unless the spinner does his work, there will be no thread for the warp and weft.

The factory, then, is a kind of community in itself. How complex this community is may be realized more fully if one looks at the census. This mentions more than 90 different classes of people concerned in the operations of a cotton mill. A great many of these classes have not been even mentioned in the general description of the factory. Let us name 15 classes, so that the lesson of the specialization of the cotton mill may be clearly fixed in our minds. Some of these we shall recognize from our reading, some not. Some will be encountered again in later chapters:

Manufacturers and proprietors.  
Managers and superintendents.  
Foremen and overseers.  
Back boys.

Bobbin boys.  
Breaker hands.  
Card fixers.  
Card strippers.

Carders.  
Cleaners.  
Cloth balers.  
Combers.

Cotton shakers.  
Designers.  
Doffers.

#### A LABORING CLASS AND A WAGE SYSTEM.

The factory illustrates well another feature of our life to-day—the fact that large bodies of men are working for others and getting wages. We have grown so accustomed to this that we do not realize how very different it is from the situation in the colonial days. As a general thing, the colonial family owned its own workshop, the home. It owned its own tools or simple ma-

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20. Why should he take an interest in the outcome of a strike on the railroads?

21. Does it make any difference to the “specialists” who work on the drawing machines whether the specialists who work on the bale breaker and the carders do their work well and in good time? Can they control what these other specialists are doing?

22. Among the various people mentioned in the census report as having to do with the cotton mill, which ones would you regard as most important?

23. Do these various “specialists” have as interesting work to do as the men and women had on the colonial farm?

24. If the modern “specialists” do not own the things which they make, why do they work at making them?

25. Who decides how much their work is worth?

chinery; it owned the raw cotton; it owned the finished product, cloth, which it used or occasionally sold. In the modern factory all this is different. The worker does not own any of these things. They are owned by his employers. The worker's main interest in the whole process is likely to be in the amount of the wage which is paid him. It is not easy for him to take pride in the machine he runs, not easy to take pride in the finished product, for he has had contact with only one phase of the process, and the product does not belong to him in any event. Do not conclude from this that the wage system is a bad thing. Like almost everything else, it has good features and bad features. Now we need merely to see that such a system exists. We shall learn more later concerning the way it operates.

In a factory the conditions of work are largely determined by the employer. In the colonial family there was no rigid schedule of hours of work, no prescribed speed of work, in many instances no prescribed place of work. But running machines by power costs money, and the workers are expected to be in their places when the machines start, and to remain there until they stop. Furthermore, it is clear that the worker must adjust his speed to the speed of the machine, and as an individual he has little to say concerning what that speed shall be. If the speed should be too high, he may have to overwork, or get hurt, or seek other employment. Finally, the work must be done at one particular place. Whether that place is well lighted and comfortably heated are matters the worker does not personally control.

Under such circumstances it is not surprising that the workers act together to request good conditions of employment; that the

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26. Did they have many accidents on the colonial farms? What kind of accidents? What kind of accidents are workers likely to have now?

27. "Most employers endeavor to secure good conditions for their workers." Why, then, do we need labor laws?

28. What sort of things are regulated by labor laws?

29. Why should the Government care whether the workers have good working conditions or not?

30. No one worker can control his conditions of work. How, then, can associations of workers have any part in control?

31. "It is easier to gratify our wants since we have factories." Why?

32. Do we want exactly the same things which the early colonists wanted?

33. What difference has the factory made in home life?

34. What is the connection between the existence of factories and the growth of cities?

better grades of employers spend much thought on securing proper conditions, both as a matter of proper treatment of other human beings and as a matter of maintaining large outputs through preserving the health of the workers; and that society, through its legislatures, passes laws concerning such matters as hours of work, sanitation, and safety devices for machines.

#### THE FACTORY AND OUR WAYS OF LIVING.

The factory has meant a great change in the way we live. Part of this change comes from the fact that the factory can produce things of a good quality very cheaply, so that it is easier for the members of society to gratify their wants than it was before the factory came. This, of course, means a great deal in securing those larger satisfactions so necessary to a full life. Another part of the change comes from the fact that much work which was formerly done in the home is now done in the factory. We saw something of this situation in our lesson on The Varied Occupations of a Colonial Farm. Home life for many factory workers is often mainly a matter of evenings and of days on which the factory is not running. When we think how the home has always been regarded as the basic thing of our lives we see what a great change this is for great numbers of people. Another part of the change comes from the fact that the factory has stimulated the growth of cities. This does not mean that there would be no cities without the factory system. It merely means that they would not be so numerous nor so large, and they would not be the same kind of cities.

We can not now take up all the results that come from the development of cities around factories, nor can we consider here many other aspects of the factory system. Again and again we shall find ourselves studying its outgrowths.

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LESSON B-4. FEEDING A CITY.<sup>1</sup>

A very large part of the business of a city is concerned with supplying the food which the people in the city use from day to day. Most people do not know what a problem it is to feed a city, because they deal in small quantities of food, buying at one time only so much as a single family needs.

## WHAT CHICAGO EATS.

If one reads some of the figures that are reported for a great city like Chicago, it is hard to imagine the amounts that are involved. For example, in the report of the Chicago Municipal Markets Commission it is stated that for the year prior to April, 1914, the city of Chicago used more than  $15\frac{1}{4}$  million dollars worth of eggs. This means that the people of Chicago ate more than 444 million eggs in a year. If all these eggs were laid end to end, they would more than reach from the Canadian boundary to the Gulf of Mexico. To think of all the farmers who raised the hens that laid those eggs recalls the fairy tales in the second reader.

During the same period Chicago used 25 million dollars worth of milk and  $28\frac{1}{2}$  million dollars worth of butter. Such vast quantities of dairy products tax the producing capacity of Wisconsin, Michigan, Iowa, Indiana, and even Minnesota, to their remotest parts.

The largest item on Chicago's market bill for that year was meat, and it amounted to  $86\frac{1}{2}$  million dollars. Like the rest of the country, Chicago depends for its meats on the ranches of the western plains from Texas to Montana.

When all these figures and others like them referring to potatoes, vegetables, fruits, and other foods are put together, one begins to understand why railroads are constantly bringing into the city from various parts of the country what Chicago needs for its table supply.

## CITIES DO NOT PRODUCE FOOD.

The ordinary person in a city does not produce very much of what he needs for his meals. When people lived on farms and

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<sup>1</sup> Prepared by Katherine McLaughlin, teacher in the University of Chicago Elementary School.

As the factory showed cooperation and interdependence, so does the market. The kinds of material dealt with in the market help to determine the social organization necessary. The lesson also shows in an introductory way the problems of a city.

kept gardens and cows and chickens, each family produced a large part of what it needed for the year. But people found it advantageous to gather in cities, as indicated in an earlier chapter, and as soon as they began to live in cities it became increasingly difficult to have a garden and to raise domestic animals. Even if there is space enough in a city for each family to have a garden, it becomes more and more difficult for the members of the family to spend the time necessary for cultivating the garden, because they have to go to work at a regular hour and they come home at night with very little inclination to work any longer.

The result is that markets have grown up in the cities which provide the people with the food they need. In smaller towns the markets are supplied by the farmers who drive in from the neighboring regions and bring in small quantities of food. But even in the small towns some of the commodities are brought from greater distances. Meat, for example, is commonly brought from packing houses either in Kansas City or Chicago or Omaha. The neighboring country seldom produces all that the town requires. If it is a wheat-growing district, fruit is not likely to be supplied by the surrounding country, and if fruit is common, cereals must be brought from greater distances. Even in the small towns, therefore, the market has to be supplied from a distance with many of the things that the people want. When the city grows larger, the distance from which the food is brought must increase in the same proportion, because the amount of food which is required is so great that it can not be produced in the immediate vicinity.

As soon as railroad connections are made which will bring produce to the city from long distances, another advantage appears. The variety of material which can be brought is greatly increased, and people have the satisfaction of using on their tables materials that are brought even from remote parts of the world.

#### THE MARKET OF SOUTH WATER STREET.

There is a street in the city of Chicago which is only five blocks long. It is said to be one of the busiest streets in the world.

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1. What part of the effort of a family is devoted to providing food? What are some of the other needs that compare in urgency with this?

2. Make a list of as many agencies as you can which are concerned in providing a city with food.

3. How do people in the big city who work all day making automobile parts or running the elevated railway or copying figures on adding machines know that some farmer will produce eggs and butter for them?



The perishable produce which Chicago needs for its food is handled there every day. A visit to that market street illustrates all of the facts which we have mentioned.

One should picture this short, narrow street, packed with thousands of wagons and automobiles which are coming in or slowly making their way out with the loads of farm products to be distributed to the stores throughout the city. The warehouses and sidewalks are filled with the produce for the day's sales. This produce has been coming in by the carload during the night, and the street begins to be busy at an early hour in the morning—in summer at daylight, in winter before.

Each warehouse specializes in some particular class of produce. One is devoted entirely to trading in cheese. One four-story building is filled with Spanish and Bermuda onions. Another has hundreds of bags of potatoes piled from floor to ceiling. These come from States as distant as New Jersey and Montana. A number of cellars of these warehouses are filled with ripening bananas from Cuba and pineapples from Porto Rico. Fruit from California and Florida is the chief stock of other warehouses. Some of them deal exclusively in citrus fruits and have in August boxes and barrels of grapefruit and oranges from California. At other times in the year these fruits come from Florida, the West Indies, and Central America.

Many of the warehouses handle only fresh vegetables. These come from the truck farms around Chicago and throughout the Mississippi Valley. For example, tomatoes are brought early in the spring from Mississippi, and as the season advances the supply comes from States farther north. The dealers say that they can regulate their trade throughout the year because they know from experience that the season travels northward at the rate of about 15 miles a day. It begins in January in Florida and moves north along the Gulf coast through Georgia, Alabama, into Mississippi and Texas, and then advances northward through the Mississippi

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4. Is there any part of a city's food that the city itself does produce?
  5. Why has the war led us to think about this matter more than before?
  6. What efforts have been made to interest school children in producing food?
  7. Is it as important to save food as it is to produce food? What are some of the ways in which food can be saved?
  8. How do the people of the city help to satisfy the wants of the various people who send them food?



River States. In like fashion in the autumn it moves southward from Maine. The wide territory from which Chicago draws these perishable products makes it possible for the people of the city to have fresh summer vegetables at all seasons of the year.

In the basements of some of the warehouses there are devices for keeping vegetables fresh and for improving the condition of those which have been injured during their travels. These are shallow tanks of cold running water, which during the spring are used to rejuvenate asparagus from California or spinach from Texas or lettuce from Mississippi.

#### STORAGE WAREHOUSES.

Most of the produce which we find on the market that we have been visiting will be wasted if it is not used immediately after its arrival. Some of it can be carried for a limited time if taken to near-by cold-storage warehouses and placed in rooms cooled to a temperature of about 40°. These warehouses serve also as the great food depositories, where the heavy production of one season can be carried over to supply later needs. For example, apples and potatoes produced in great quantities in the fall are stored here for use during the winter months.

#### DAIRY PRODUCTS, POULTRY, EGGS, FISH, AND MEATS.

The cold-storage warehouse serves a highly important purpose in the life of the city. Such products as cheese, butter, poultry, and eggs can be kept in storage for a long time. Large quantities of fish and meat are also kept in these warehouses. It is most important that dairy products should be collected in the seasons when they are abundant, in order to be carried forward through the year. For example, the number of eggs produced in April, May, and June, and the quantities of butter in June, July, and August, are much more than the amounts consumed. On the other hand, during the fall and winter months the fresh

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9. Mention some of the means by which food is brought to your house other than by way of the railroad.

10. There are large farms which raise nothing but wheat. Could this have happened if we had not had railways?

11. Would it be possible to feed a city without railways? Have railways caused the population of cities to be very dense by making it possible to get food to a dense population, or have they caused the population of cities to be scattered by making it possible for people to get to their daily work from large distances?

supply of these two important foods is far less than the amounts needed. The eggs are stored in rooms at a temperature of about  $32^{\circ}$ , but this temperature must not go low enough to freeze them. They freeze at a temperature of  $29^{\circ}$ . The butter, on the other hand, is usually frozen when it is stored, and kept in that condition until it is withdrawn. One storage warehouseman, however, described butter as a very accommodating guest. It can be kept at varying temperatures and can be taken out of the coldest rooms if the space is demanded for more perishable foods.

Poultry is also stored for definite seasonal reasons. Spring chickens reach the broiling age in July and August; hence it is usual to put away "spring fries" in large quantities so that the market may furnish this delicacy during the rest of the year. Roasting chickens go into storage in November and December because the farmer wants to conserve his chicken food during the winter. Fowls and turkeys are stored in large quantities during December and January.

People are often prejudiced about the food which has been in cold storage. There is danger that it will deteriorate if kept there too long. Laws have been passed regulating the length of time that various kinds of food may be stored and otherwise restricting the use of storage.

When cold storage is properly used it is of great benefit to the people. It equalizes the supply from season to season and also tends to equalize the price. It is a necessity in a great city, which must always have on hand a varied food supply in large quantities.

#### PEOPLE EMPLOYED BY THE MARKET.

The markets which we have been describing and the cold-storage warehouses connected with them would not be possible without the labor of a great number of people, some of whom are concerned with the distribution of produce to the consumer, some

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12. Experts have had to study the effects of transportation on vegetables and fruits and have evolved hardy varieties which keep well and stand handling. Can you think of other ways in which trained specialists have helped solve the food problems of cities?

13. Do you know any examples in modern history where military operations have forced a city to surrender because of hunger?

14. How long do you think a modern city could live if no food were brought in from without?

15. Is it as easy in military operations to starve out a nation as a city?

with bringing the produce into the city, others with securing it at the points where it is produced. And we must not forget the fact that the market is ultimately dependent on the producer who raises all of its different commodities.

It is not possible to go into all the intricacies of the system of trade which has been developed in the modern produce market. Some of the main lines of division may, however, be traced, and from this outline sketch we shall gain a general idea of the way in which many people cooperate in feeding a city.

The man who comes into the most direct contact with the producer is the "buyer." At times he can be dispensed with because the producers organize themselves into cooperative groups and sell their own produce. The buyer is a traveling member of the trade sent out by some particular firm to make purchases. He goes through a producing territory, making contracts with producers for the whole or a stated portion of their output, or buying from day to day wherever he can secure goods at satisfactory prices. He keeps in close touch with his employer, advising him by letter, telegraph, or telephone of the condition of the field and the outlook as to quantity, quality, prices demanded, and amount and character of competition from other buyers. In turn he is advised about the demand at the market and instructed as to how much to buy and what to pay. The buyer turns his purchases over to the transportation companies, who in turn deliver them to the market which we visited.

Goods may arrive at the city market under other conditions. Sometimes the producer ships his products to a commission merchant, who sells them for him. Sometimes selling associations of the producers send their products to their own representatives on the market. Producers in remote regions sometimes combine their shipments and send them in carload and train-load lots to the large cities, where they are sold at public auction. The auction sales generally take place at railroad freight yards or at steamship piers. The commodities sold by auction are usually limited to the citrus

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16. Is it of any concern to you if there is a poor rice crop in China? Or a poor coffee crop in Java?

17. What is a wholesale market? A retail market? An importers' market? A tea market? Is a grocery store a market?

18. How many different States or countries have furnished supplies for your meals to-day?

19. Would a railway strike affect the problem of feeding a city? Would a teamsters' strike?

fruits from California, Florida, and foreign countries, and the deciduous fruits, such as cherries, grapes, plums, peaches, apples, and other fruits from the West and Northwest. Some foreign shipments of bananas, pineapples, and nuts are also sold at auction. Goods from these auction sales are resold in the market.

When the goods reach the market they are handled by a number of different kinds of traders. The most familiar type is the retailer, whom everybody knows, because it is he who supplies the family with the small quantities needed from time to time.

#### THE WHOLESALE GROCER.

A consideration of the market supply is not complete without a view of the part played by the wholesale grocer. He deals in commodities of a less perishable nature. He also, like the market merchant, goes out into the productive areas of the country and even into those of far-distant countries. He imports tea from Japan and China. From Brazil, Colombia, Java, and Arabia he brings in the billion or more pounds of coffee used in the United States. We may stop to remark that of this billion pounds the city of Chicago uses \$13,000,000 worth a year. He gets cane sugar from the West Indies, Hawaii, and the Tropics. The olive groves of Spain and Italy, the melon patches of Egypt and Hawaii, the terraced rice fields of China, the date palms of Persia, and the currant vineyards of Greece supplement the food products gathered from the farms, orchards, pastures, lakes, and streams of our own country.

Much of this material, after it comes to the wholesale grocer, must be specially prepared before it is ready to be put into the hands of the retailer. For this purpose special machinery is used, such as large mills for grinding spices, machines for cleaning the coffee, and ovens for roasting it, automatic carrying belts for bringing the coffee from the floor where it is parched down to the floor where it is put into packages that meet the requirements

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20. Why should not the people of cities produce a greater proportion than they now do of the food they consume?

21. Some people say that you can get better fruit and vegetables in the city than you can in the country. Can you give any reasons why?

22. Fruit is said to be standardized for the market. What is the meaning of this statement? What evidences do you see of standardization in the markets that you know?

23. Make as long a list as you can of the ways in which society regulates the food supply of a city.

of the retail trade. Olives arrive in large hogsheads. The olives are carefully washed and bottled in brine, or the stones are removed and the olive filled with pimentoes that come usually from Mexico. Raisins come in huge boxes or bags and contain much of the dust of travel. They are first placed in a hot room, where the surface of the raisins is thoroughly dried. Next they are placed over a sieve that automatically shakes them backward and forward, removing the dust, dirt, and sand. From this machine they are run through two or three tepid baths, and after leaving the last tank they are passed slowly over wire with different-sized meshes, where the small raisins fall through first and the larger ones of different grades are sent along a carrying belt to the girls who put them into the packages which we buy at the retailer's. Brazilian nuts come in a very rough condition. They are passed slowly through rotating cylinders which polish them. As they pass out of the polishing machines they are graded into different sizes, as the raisins were. Other nuts are treated in a similar manner. In some cases, as with the almonds and walnuts, the shells are removed and the meats are sometimes salted. Formerly much of this was done by hand, but in the modern wholesale establishment machinery makes possible the handling of great quantities of all these commodities by thoroughly hygienic methods.

#### THE MEANING OF THE MARKET.

Again and again, in this course, the fact will be emphasized that we live in a world where everything is at our door; where the ends of the earth meet on our dining tables because men cooperate in supplying one another's wants.

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## Chapter II.

### PRODUCTION AND WISE CONSUMPTION.

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The lessons in this chapter emphasize the fact that careful use is equally as important as production. Waste is a far-reaching evil, not measured alone by the value of the goods wasted. It is often difficult to detect evidences of waste and it sometimes happens that men are guilty without knowing it of prodigality which works injury to their children and their children's children.

The farmer who impoverishes his soil by taking from it more than he puts back makes it necessary for those who come after him to work harder to raise smaller crops; and even those who do not live actually upon the land are injured by its lack of fertility, for it is harder for them to obtain food and clothing. If the fields of the East were now as productive as the new soil of the West, there would be no serious food shortage, notwithstanding the war. Modern science has done much in restoring poor land and in conserving good soil.

Waste has frequently resulted from ignorance of the value of the thing wasted or from a lack of knowledge of how to utilize it. In the past, cotton seed was thrown into streams as refuse, or allowed to rot in great heaps near the gins throughout the South; now it is made to yield valuable oil for human consumption and an excellent food for cattle. Immense piles of fine coal, or "slack," formerly accumulated at coal mines and it was a serious problem how to dispose of it, for it was considered worthless; ways have since been found to utilize all of it, and it is now in such demand that sometimes it actually brings a higher price than lump coal. Many such instances might be mentioned. The most remarkable is that of coal tar, which is described in Lesson B-6.

The human body offers a striking example of the need of care in supplying the proper materials in the proper quantity, in order to avoid waste in health and strength and waste in materials. We know now that many diseases whose origin was long obscure are caused by the lack of certain elements in the food. The body demands nourishment in sufficient quantity and in such variety as will furnish all the elements which are essential to growth and repair.

If wise use is required for the material things of this earth, it is required all the more for the efforts of men. The highest welfare of mankind demands the effective cooperation of all its individual units. Misdirected labor is waste of the most serious kind.

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#### LESSON B-5. SAVING THE SOIL.

By E. R. DOWNING,

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If a man has wealth in the form of money and uses it up recklessly, everybody can see that he is wasteful. If a man cuts trees in the forest and never plants others to grow and take the places of those he has used, everybody can see that he will shortly be at the end of his lumber supply. But a farmer can use up the soil on his farm and people will not see what is happening.

The soil is taken up by the roots of a plant little by little. When ripe fruit is carted away from the farm or when a load of hay is



carried away from the meadow, most people do not understand that the soil is used up. The fact is, however, that every crop that grows in the fields uses up soil just as human beings use up food, and the farm will become poorer every year unless something is done to protect and restore the soil.

#### A SEED TAKES FOOD FROM THE SOIL.

How much is taken out of soil by growing crops will be better understood if we think of the difference between a seed and the plant that grows from it. Think what a small seed grows into a great head of cabbage. A wheat plant weighs about 2 ounces; the kernel of wheat from which it came weighs less than a thousandth as much. It takes about a fourth of a bushel of corn to plant an acre. Last year 25 bushels an acre were harvested from such plantings. This means an increase of a hundredfold in corn kernels alone, to say nothing of stalks.

To be sure only a part of the plant comes from the soil. The air and the rainfall contribute the rest, but every cornstalk and every wheat plant takes some of the soil, and unless the farmer is very careful to put back in some form what he has borrowed his fields will soon grow less and less productive, because the soil will be poor in those elements or parts which have been taken up for food by the crops.

#### HOW NATURE CONSERVES THE SOIL.

When plants are growing wild in nature the soil is kept rich because each season's growth stays where it is formed. The vegetation rots and is added to the earth again to enrich it.

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1. The words "reclamation" and "conservation" are used in describing the efforts that are made to enforce the proper use of natural resources such as lumber, soil, etc. Can you describe forms of conservation other than those mentioned?

2. In addition to taking care of the soil, man frequently has to conserve water and sunshine. Describe the methods by which he does this.

3. How thick is the layer of soil from which plants derive their food?

4. It is said that the fields of northern France have been ruined by the bombardments that have been carried on by the fighting armies. Explain this statement in connection with the answer to the last question.

5. Find out the amount of material that enters into various crops, for example, the hay, potato, fruit, or tobacco crops, or any other crop that is common in your neighborhood so that you can find out about it.



In the forest the leaves fall each year to form a carpet that slowly decays and mingles with the soil. The soil thus becomes richer each year with vegetable matter, or "humus," as it is called. The same thing happens on the prairies, only there the plants that make the annual layer of decaying matter are grasses and flowering herbs.

The humus that has accumulated during long ages in forests and on prairies makes a soil which is especially rich, because plants draw a part of their nourishment out of the air, and when they rot to form a part of the soil they put into it what they have taken out of the air. New land, or land which has not been cultivated by man, yields more than soil which has been used for crops year after year without being repaid for what is taken out of it.

In 1915 Pennsylvania farmers produced a little over 18 bushels of winter wheat on each acre planted to this crop, while farms in the State of Washington produced nearly 28 bushels per acre. South Carolina averaged 19 bushels of oats to the acre, Montana 52 bushels. The best average yield per acre of wheat, oats, barley, rye, rice, hay, cotton, and potatoes all occur on the new lands of the States west of the Mississippi.

#### MIGRATION AND NEW LANDS.

The fact that new land is more productive explains why people have migrated from their homes and have pushed their way into new regions where larger crops could be gathered from the rich soil. The American frontiersman, for example, when he traveled into the prairies with his schooner and took up a claim in what is now Iowa or Kansas or some farther western State was seeking new and fertile soil. Many New England farms have been abandoned because the soil is worn out.

These facts from the history of our country are especially interesting at this time, because most of the new land is now occu-

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1. Show from the history of our country that new lands have been easily accessible until recent times.
  2. Settlers who go to new lands, though they find rich soil, encounter many difficulties before they can take full advantage of the rich soil. What are these difficulties?
  3. The United States has been described as a nation whose exports are almost entirely raw materials. Explain this statement in connection with the discussion of the text.

pied. There is very little possibility of any large migrations to rich unoccupied territories. We are beginning to learn the lesson which older nations learned long ago. This lesson is put into a single sentence by the experts in agriculture. They say we must begin intensive farming. This means that we must keep the soil in good condition by watching it and restoring it every time we take out a crop. We can not spread over any more new territory and carry on extensive farming; we must apply better methods of cultivation and fertilization to the limited supply of land which we have.

#### THE SUBSTANCES NEEDED FOR PLANT FOOD.

There are eight or nine simple substances, or "elements," as they are called, which the ordinary crop must have for its food. Some of these are minerals which must come from the crumbled rock which makes the soil. Iron is such a mineral element; it helps to make the green coloring matter without which most plants could not grow at all. Silica and potassium are other such elements. The former serves chiefly to strengthen the stems of plants, as the stalks of oats. If a plant is burned the ash which is left behind is made up of iron and like substances.

Plant food is drawn in part from the air as well as from the soil. One substance which is taken into plants directly from the

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1. Certain nations have learned better than the American nation to protect their soils. Is this due to superior intelligence on the part of other nations?
  2. The Chinamen are said to make long journeys and to collect by hand seaweed and other vegetation which they work into the soil of their highly cultivated small plots of ground. How did they probably learn the advantages of doing this?
  3. Describe some of the reasons why rocks crumble to make the soil.
  4. Different parts of the country have soils of different colors. What does this show?
  5. What effect on the crops of a given part of the country does the character of the soil have?
  6. The text does not mention water as a part of a plant's food. How can you prove that a plant uses a great deal of water?
  7. Certain plants will not grow in the neighborhood of factories and smelters. Why is this so?
  8. How is charcoal manufactured?

air is carbon. Carbon is absorbed by the leaves of the plant in the form of a gas known as carbon dioxide. It contributes very largely to the bulk of the plant. When wood is partly burned the black charcoal left behind is in large part carbon.

#### NITROGEN AS A PLANT FOOD.

There is another substance in the air which is important as a plant food, but it gets into most plants by a very roundabout route. This substance is nitrogen.

Nitrogen can not be absorbed by the leaves of a plant as carbon can. Nature has, therefore, put into the soil the nitrogen which ordinary plants must have. The common soils of the country contain about a ton and a half of this necessary nitrogen in the top 7 inches of each acre, that is, in the layer which is turned by the plow and in which most of the plant roots lie. The poorer soils, as for example those in some parts of the State of Illinois, hold only about 1,200 pounds to the acre. The average corn yield of last year, which amounted to 36 bushels to the acre, took out 50 pounds of nitrogen from each acre. A poor soil would soon have no nitrogen left at this rate and even a good soil could not produce yearly corn crops very long unless nitrogen were added to the soil.

One way by which man restores a soil from which plants have taken the nitrogen is to spread over the field some of the nitrate brought from Chile. This, as was shown at length in an earlier lesson, is done on a large scale in the United States and also in other parts of the world.

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1. How does one find out about the elements that are in the soil?
  2. Suppose that a farmer who has land with very little nitrogen in it encounters difficulties in raising his crops but does not know the reason for his difficulties. What advice would you give him?
  3. In deciding whether or not to buy nitrate fertilizer for his soil the farmer ought to be able to determine whether he gets a sufficient additional return from his crops to justify the outlay. This means that he must keep some kind of accounts. What are the difficulties that the farmer meets in trying to keep his accounts that are different from those which concern the merchant?
  4. Would it be advantageous for farmers to cooperate with each other in the study of soils?
  5. Numerous farm journals are published and widely read. Show that these are in reality a form of cooperation among farmers.

The question that must have come to mind from reading the last two paragraphs is: What does nature do to restore soil when man is not wise enough to fertilize it artificially with nitrates? The answer to this question is one of the important modern discoveries of science. This discovery has done much to change our methods of agriculture and it gives us the reason for many of the practices which farmers happened to learn before there was a science of agriculture.

#### BACTERIA AND SOIL.

While most plants can not absorb directly the nitrogen of the air, some of the simple plants, called bacteria, can. These are plants which are so small that they can be seen only with a powerful microscope. They are found in the soil in countless numbers. They feed on nitrogen and make it into a part of the solid substance which composes their bodies. Soils that are poor in nitrogen improve just by lying idle, or "resting," as the farmers call it, because these nitrogen-fixing plants are present. They live in especially large numbers on the roots of plants that belong to the pea family, such as alfalfa, beans, clover, and vetch. These "legumes," as members of the pea family are called, are therefore good to plant on worn-out soils, for not only do the bacteria take from the air all the nitrogen food needed by the legume, but they produce a surplus which is left in the soil. It is possible to raise a crop of clover or soy beans and have the ground richer after the crop is taken off than it was before.

Often the farmer plows the legume under as green manure, thus adding to the soil not only much nitrogen but quantities of other valuable plant food and humus to make it lighter. This practice is very good after a field has produced a crop which uses much nitrogen. For the reasons given, clover, which is a nitrogen yielding plant, may be planted after wheat is harvested. There

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1. What other services do bacteria render to man? Mention also certain disservices which bacteria render.
  2. Earthworms are helpful in preparing the soil for cultivation. In what way do they help?
  3. Does a farmer need any education beyond what he would get in the sixth grade?
  4. When farmers want to "rest" their land they very frequently turn it into pastures. Why does this improve it for later tilling?
  5. Mention some other forms of crop rotation that are desirable.

is time enough in the fall for the clover to get a good growth before frosts come. By late spring or early summer of the next year it yields a crop of hay. It grows up again after cutting, blossoms, and later the seed is harvested. Cattle may still browse on it for some days before it is plowed under in the late fall. A year of clover will thus produce profit from the clover itself and in addition will make the soil ready to take another planting of wheat or some other crop that needs much nitrogen. Such a change from a crop which takes material from the soil to one which renews it is called crop rotation.

#### CROP ROTATION.

The wise farmer divides his farm into a number of fields, and each year changes the crop which he raises in any one field. If he raises wheat in one place this year, he will raise clover there the year following. The division of the farm into fields makes it possible to produce each year some wheat, some clover, and so on through the list of crops that are wanted. In this way the farmer brings nature to his aid in natural fertilization of his land.

There are other advantages which come from rotation. A change in crops often helps to kill weeds. Many weeds that creep in where cotton is growing, for example, will be killed by planting corn in the field. Insect pests are also often destroyed by a change in the crop. There is an advantage, also, in putting into the field at one time a crop which sends its roots deep into the soil and uses the lower layers, and at other times a crop which has only surface roots.

#### THE SCIENTIFIC STUDY OF SOILS.

In addition to the knowledge which the scientific study of soil has brought to light about nitrogen, there are other facts which have been learned by analyzing fertilizers and by making experiments with the raising of crops.

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1. Find out from a store where fertilizers are sold something about the different varieties that are to be had.
  2. Draw a plan of a small farm and make plans for the rotation of crops through a period of years.
  3. A "balanced" farm is one which raises both cattle and crops. What is meant by the statement that such a farm is balanced?
  4. What other forms of scientific study does the Government undertake besides studies of agriculture?

The most valuable single fertilizer and the one most widely used is barnyard manure. It contains much nitrogen, enough potassium and phosphorus for most soils, and so much humus that it improves the texture of the soil to which it is added.

#### THE GOVERNMENT STUDIES SOILS.

It is so important for the life of any nation that its soil shall be conserved and made to produce as much food as possible that the Government takes a hand in the matter. Some people think of the Government as a power which devotes all its strength to passing laws and enforcing them, or to raising armies and settling matters of international dispute. The fact is that the Government, representing all the people, is the center of the conservation movement. It is awake to the necessity of saving the lumber and the coal and the water power.

The Government of the United States, through its Department of Agriculture and through the State colleges of agriculture, has given a great deal of attention to the matter of selecting fertilizers, to crop rotation, and the study of soils. Extensive experiments have been made in different parts of the country and the results are printed in reports which any citizen may readily secure. In this way the Government has helped to make a science of agriculture and to give its results to people who can profit from them.

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**LESSON B-6. MAKING DYES FROM COAL TAR.<sup>1</sup>**

When illuminating gas is made from soft coal, there is given off a black pitchy substance known as coal tar. For many years this tar was regarded as a nuisance and was thrown away. To be quite exact, we may say that from about 1820, when the great cities of the world began to use gas, up to 1845, when scientists first studied coal tar, this thick, dark liquid was nothing but a waste product. It was poured into rivers and lakes and was there left to be disposed of by nature.

**SCIENCE DISCOVERS THE USE OF COAL TAR.**

In 1845 a scientist by the name of Von Hofmann found that he could separate coal tar into a number of different substances by the process of distillation. When he heated the tar in a closed vessel, a number of vapors were given off at different stages in the heating process. He found that these vapors could be condensed and that each one produced a different substance. We now know 10 such substances or coal-tar "crudes," as they are called.

From the crudes are manufactured a great many valuable and useful articles. A number of medicines are derived from coal tar, such as aspirin and salvarsan. Some of the flavoring substances, such as essence of wintergreen, are produced from coal tar; when pure, they are the same as the extracts which are derived from the plants after which they are named. Saccharin, which is 500 times sweeter than sugar, is also a coal-tar product.

Nothing, however which is produced from coal tar furnishes a more striking contrast to the dark pitchy mass than the brilliant dyes which are manufactured from it and are used in all kinds of commercial processes. Most of our writing inks and all the colored inks of the printer are derived from coal tar. The colors used in dyeing cloth and feathers and leather, the paints used by artists and painters, are nearly all made from coal-tar dyes.

The coal-tar dye industry began in 1854 when an Englishman by the name of Perkin, a student of Von Hofmann, commenced to make in commercial quantities a violet coloring matter which he had discovered. Since that time the production of dyes has gone

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<sup>1</sup> The material for this lesson was supplied by Mr. W. R. Macklind, of the Sherwin-Williams Co.

The lesson shows how material regarded as waste may have within it possibilities of great usefulness to man. It also shows something of the importance of science to man in his efforts to make use of what nature provides.



forward rapidly until to-day there are a thousand different colors made, the methods of making which are publicly known. Another thousand are made by processes which are secret. Some of the dyes made by secret processes are very expensive and are greatly sought by the trade. The discovery of new shades is encouraged by the high prices paid, and makers vie with each other in producing new and striking colors.

#### WHAT COAL-TAR DYES HAVE CONTRIBUTED.

Before we take up the making of dyes, let us try to imagine how different our present-day world would be if we did not have them. Before 1856 people depended for coloring matter on certain plants which they boiled. Indigo was one of the most attractive of the vegetable dyes. It came from India and was imported at first as an expensive luxury. Afterwards it was cultivated in all parts of the world. Other dyes were derived from native plants like the oak and the sumac. Most of the vegetable dyes lacked, however, the brilliancy of coal-tar colors, and there were only a limited number of shades which could be produced. To-day there is no limit to the number and brilliancy of colors that can be made.

It is an impressive lesson that all these modern dyes are taken from a substance which was once thrown away. Science has transformed an ugly waste into an array of bright and useful colors that attract and please the eye of man and contribute to the beauty of his surroundings.

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1. What kind of coal is used in manufacturing illuminating gas? What is the method of manufacture?

2. Describe what happens in distillation.

3. Are there other cases in which substances once wasted are now used?

4. Coal tar is called a by-product of gas. What is a by-product? Find examples other than tar.

5. Why do manufacturers have secret processes? What factories other than dye factories have secret processes?

6. What things about you are artificially colored?

7. Is it right to color foods?

8. The history of coal tar is paralleled by the history of petroleum, which has been found to yield many valuable materials which were at first wasted. Find out about the products of petroleum.

9. The value of dyes because of their beauty raises the general question of the commercial values which are added to things because they are attractive in appearance. Give examples.

## SYNTHETIC DYES.

The dyes made from coal tar are called synthetic dyes. This means that they are made by synthesizing, or putting together under proper conditions, substances which unite and produce a new chemical compound. The best example of synthesis is exhibited by nature in the growth of a plant. The roots take up elements from the coarse dark soil and the plant combines these elements with others drawn from air and water, and under the influence of sunlight synthesizes all into the green leaves and colored blossoms.

## ARTIFICIAL SYNTHESIS.

The synthesizing of substances by plants is imitated in some measure in the dye factory. As a visitor goes into such a factory he is shown a great retort or closed vessel in which one of the coal-tar crudes is being mixed with sulphuric acid. Inside the retort are rotating paddles or agitators as they are called. The retort and its contents are raised to a high temperature, for heat helps to bring about the chemical change desired in the mixture. This high temperature can be compared to sunlight acting on a plant. Sometimes the heat necessary for the artificial synthesis is so great that it can not be produced by ordinary means; then coils of pipe containing superheated oil pass through the walls of the retort.

Sometimes the synthesizing is of a very different type. A strong nitric acid, for example, is slowly poured into a retort containing a coal-tar product. The temperature is kept very low by means of a freezing mixture, which passes through the coils of pipe in the walls of the retort. Agitators keep the mixture in constant motion. If the temperature begins to rise, it means that the acid is coming in too rapidly or that it is acting too vigorously, and the operator shuts it off. If the temperature still continues to rise, the operator knows that an explosion is coming and he leaves.

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1. Look up the word "synthesis" and find out what it means more than merely putting things together in a mixture.
  2. Why should agitators be required to help in making dyes? Can you think of processes in the kitchen where something of the same kind is required?
  3. Why does oil carry a higher temperature than water?
  4. What are some of the freezing mixtures used in manufacturing processes?

The comparison of these processes with those which occur in a plant will be recognized as quite legitimate when it is remembered that the coal tar on which all this manufacturing of colors depends is indeed a result of plant growth. Back in the carboniferous age when coal deposits were formed the luxurious plant life built up the substances which we now get from coal. These substances are therefore plant products. What our dye manufacturers have learned to do is to work over these plant products of a long-past age and bring out their brilliant possibilities.

#### THE COMPLEXITIES OF DYE MAKING.

Mixing some coal-tar products in hot chambers and others in cold chambers gives only a partial idea of the complexity of the methods that must be adopted in making a dye. The visitor to a dye factory is shown room after room where all kinds of treatments for the various substances are provided. Sometimes the material is mixed with lime or with caustic soda and drawn off in solid form. Then it has to be pressed and dried. Again, it is dissolved in water. Sometimes it is put through a vacuum or a centrifuge in order to drive off the water. Sometimes it appears as a liquid and in the next process it becomes a solid.

Each time the material passes through one of these processes it undergoes an inner chemical change. Each process is called a stage or step toward the making of the dye. Some of the simplest dyes require 25 stages, while the more complicated ones require a hundred or more. Usually the product of these partial processes has no resemblance whatever to the finished dye.

In many of the processes time is an element. It takes five hours, for example, for sulphuric acid to mix thoroughly with one of the coal-tar products known as naphthalene. The process must be conducted at a temperature of  $160^{\circ}$  C. and under 3,000 pounds pressure.

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1. Describe the formation of coal.
  2. Where does lime come from?
  3. What is a chemical change? Can you find some examples of simple changes of this kind?
  4. How much is  $160^{\circ}$  C. in terms of the ordinary thermometer.
  5. Several references have been made to the expensiveness of dyes. Show how the following items contribute to this expensiveness: Time required, number of steps or stages, demand for exactness in each stage, pressure, temperature conditions.

**THE PROCESSES OF MANUFACTURE MUST BE EXACT.**

The inner chemical changes produced under conditions like these must be carried to completion with the highest degree of exactness or the dye will not be perfect. When one considers the number of different steps through which a single dye must pass, one understands why dyes are so expensive. If one of the steps is not allowed time for completion or if improper quantities of the various substances are put together, the result will be an imperfect dye.

A perfect dye is one which is pure and complete in all the stages through which it passes. The expert knows a perfect dye by two qualities. First, it is always the same in shade; second, it is a fast color, that is, it will not fade.

The importance of having a constant dye may be readily understood when it is remembered that many commercial uses of dyes are absolutely dependent on the ability of the user to match his dyes. The lithographer, for example, wants to be sure as he prints with colored inks that his ink will be the same hour after hour and day after day.

The fast color is one which is so pure and so settled in its inner composition that it does not undergo any chemical change when light falls on it. If, on the other hand, a color fades when exposed to the light, it is known to be impure or unstable in its chemical composition.

**HOW SURFACES GET COLOR.**

When the dye is finished, it is applied to cloth or leather or wall paper, or it is used in manufacturing pigments for paint. Our explanation of color is, however, not complete until we find out how it is that a dye affects the eye so as to give us an experience of red or green or blue.

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1. Can you think of other manufacturing processes which depend on the purity of the substances used for their success?
  2. What other examples can you supply of the need of close matches in colors?
  3. What effects of the war on dyes have you observed?
  4. Many of the effects of light on substances are used in photography. These also are chemical processes. What can you find out about them?
  5. Paint is not made directly from dyes. Find out about the manufacture of paints.
  6. How is color applied to leather? How is cloth dyed?

If we stand before a painting in the dark we get no sensations of color from the painting. Color is produced by light which is given out to the eye by a colored surface. Daylight has in it all the colors. When daylight falls on a given surface a part of this light is taken up or absorbed by the surface; a part is thrown out, or reflected, and enters the eye of the observer. A red rose is red because the rose takes up the green and blue and violet rays that are in daylight and sends out the red. The grass is green because it takes up all the red rays in daylight and sends out the green.

A dye is a substance which takes up a part of the daylight and sends back the rest. A blue dye, for example, takes up or absorbs all the red and yellow and reflects the blues, and so on through the long list of different dyes. If the dye is such that it undergoes no change in absorbing and reflecting light, we say that the color is fast. If the dye is changed by the light which it absorbs, the result is usually undesirable because the color becomes paler and less beautiful. There are a few dyes which seem to have the property of becoming softer and mellower with age and exposure to the light.

#### LEARNING THE ART OF DYE MAKING.

America is just beginning to learn the art of making dyes. Before the war the Germans made most of the dyes used in this country. They were able to hold the trade because of their superior knowledge of the intricate processes through which the dyes have to pass. By long experience and careful study they have perfected the steps of making each dye. They have learned how to make each partial product again and again in exactly the same way. Many families are expert dye makers. They hand down from father to son the traditions of one single step in the process and are satisfied to specialize on this one step.

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1. What effect does sunlight have on the human skin? What does this show about the absorption of light?

2. How many primary colors are there in sunlight or ordinary daylight? How do we know that these colors are in daylight?

3. There are a great many experiments one can try with colored surfaces and with colored glass. Put together a pane of blue glass and a pane of yellow glass and let the light pass through both. What color results? Why? Now spin a colored top with blue and yellow surfaces and note that the result is entirely different. Why?

4. Why is America behind Germany in the matter of making dyes?

The war has set Americans experimenting. With many a blunder which results in dyes that fade, our manufacturers are learning to do their work. Every dye factory has a special chemical laboratory where experts are constantly at work. If a dye goes wrong in the making, they must find the difficulty. If a customer wants a special shade, they try to find a formula for making it. In the meantime they are experimenting all the time with a view to finding shorter and surer methods of carrying on the processes of the factory.

#### THE GROWTH OF THE AMERICAN INDUSTRY.

In 1913 the United States imported more than \$7,000,000 of dyes and exported about a third of a million of dollars' worth. During the year ending June 30, 1915, the tide turned. Last year we exported more than \$11,000,000 worth and imported less than half as much as in 1913. In using these figures we must remember that the price of dyes has risen greatly, so that the production in pounds has not risen to the extent indicated by these figures.

Importations from Germany have, of course, ceased. The other countries that manufacture dyes on a large scale are Switzerland and England. A few manufactories exist in Holland, Belgium, and France.

#### DYES AND EXPLOSIVES.

One interesting fact with regard to dyes is that their manufacture is very closely related to the making of the highest explosives known to man. These explosives are also made from coal-tar products and by processes which are in part identical with those used in making dyes. It will be remembered that comment was made in an earlier paragraph on the fact that

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1. What other examples can you find of scientific laboratories which are parts of manufacturing establishments?
  2. What other readjustments in American exports and imports followed the outbreak of the war?
  3. How does a tariff affect industry?
  4. One hears much about the probable relations between countries which will follow the war. What are some of the important conditions that influence international trade? How are they likely to operate after the war?
  5. Among the references given at the end of this lesson are many Government bulletins. Why should our Government take up a matter of this kind?



certain of the stages of dye making are dangerous because they are likely to result, unless closely watched, in explosions.

Germany's interest in coal-tar dyes was closely related to her interest in explosives. At the beginning of the war, with her usual ability to adapt means to ends, she turned her dye factories which had been supplying the world, into factories for the production of explosives.

#### CAN AMERICAN MANUFACTURERS COMPETE AFTER THE WAR?

What will come after the war is difficult to say. American factories are now beginning to make dyes on a large scale. It is said that more than \$200,000,000 have been invested within the last two years and a half in plants for the manufacture of dyes, and other chemicals from coal-tar products. Some of the manufacturers are asking that their business be protected after the war by a high tariff. Others are preparing by the perfection of their processes to compete with manufacturers in other parts of the world.

Our manufacturers have been led by their efforts to make dyes to understand as never before the desirability of using coal tar and all its products. They are learning also to value science, which must be called in to guide all the processes of the factory. It is common for dye factories to employ workers who have had the highest education that our universities and technical schools can give. It is through the fuller development of science in this industry that our manufacturers will ultimately be able to carry on the industry in such a way as to make it profitable in spite of competition.

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## LESSON B-7<sup>1</sup>. AN INTELLIGENTLY SELECTED DIET.

There is a sawmill in northern Michigan which had a contract last winter to supply furniture manufacturers in the southern part of the State with 50,000 feet of lumber a day. Arrangements had been made for cutting and hauling the logs and for shipping the lumber. The saws were ready to do their work, and the workmen at the mill were thoroughly competent, experienced men. The company had set up some fine new engines, and all seemed very promising. There was just one difficulty. The company could not get the coal for which they had contracted. They had made arrangements in the fall for a high grade of coal from the mines of Indiana, but because of troubles at the mines the coal that came through was of a poor grade, full of slack and shale. The engineers were using this poor coal as best they could and were mixing with it some wood and sawdust, but the mill which would have put out 60,000 feet of lumber a day if it had good coal was running behind its contracts. The saws did not have power enough.

### UNSUITABLE DIET MEANS LOW LEVEL OF BODILY LIFE.

It is easy enough for anyone to understand the difficulties of that sawmill. There is another case which is very common and of exactly the same type which people do not seem to understand. In many city homes in the tenement districts the children do not have enough food. For example, they have for breakfast a piece of bread and a cup of so-called coffee. This is neither enough nor is it of the right kind. The child would be much better without the coffee, and he ought to have some fat with the bread. Milk would be better than mere fat, because milk contains nearly all of the substances which the child's body needs. Without these additions to the bread the child is like the sawmill without sufficient power.

Sometimes whole nations get into difficulties with their food. A recent investigator who has studied the inhabitants of Bengal says that these people are incapable of performing a really hard day's work. The explanation is that they live too largely on rice,

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<sup>1</sup> Prepared by Minna C. Denton, University of Chicago.

The lesson aims to show how food should be selected in order to furnish the body with all that it requires for its life and work. The body as a machine furnishes an excellent example of the importance of the wise consumption of materials.

and rice does not supply what is needed to keep the muscles in fit condition.

#### FOOD AND BODILY ENERGY.

Other investigators have carefully measured the difference between the amount of energy used by clerks and farmers and by a six-day bicycle rider. They have measured the amount of energy used by a man who lies in bed all day and that used by a man who sits in a chair for 16 hours in the day. These studies give definite information with regard to the amount of material consumed by the body in different kinds of activity. The body is exactly like a very complicated engine and requires the same kind of attention to its fuel if it is to do its work.

There are other things that a steam engine needs besides fuel. It must have water. It must have lubricating oil. It wears out, and in this sense uses up the iron and steel of which its parts are made.

#### WATER.

The body needs in exactly the same way many different materials if it is to keep alive and do work. A person who weighs 150 pounds has in his body 100 pounds, or about 12 gallons, of water. The supply must be renewed exactly as in an engine, because water in the form of vapor is constantly given off from the lungs and skin or is taken out of the blood by the kidneys. Water is necessary, not only because it is an important part of the body, but also because its free use flushes out body wastes.

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1. No mention is made in the text of the fact that air as well as fuel is needed for both the furnace and the human body. In what way is air used up by the burning of fuel?

2. Why must the body be supplied with air, and what are the organs that make it possible for the body to use air?

3. Why should a hard-working man need more food than a small boy, and a different kind of food? What are some of the other differences between the food used by grown people and children?

4. Are there many people in this country who are less efficient than they might be because of the lack of proper food?

5. Not all engines require water for their operation. What is the difference between the steam engine and a gasoline engine?

6. Why do engines require lubricating oil?

7. When one is exercising vigorously, what evidences are there to an observer that he is using up food material more rapidly than usual?

8. What is the relation between the facts given about the amount of water in the body and man's ability to learn to swim?

Especially important to life are the materials which repair the waste of the body parts or enable them to grow larger. The muscles require for their proper upkeep certain substances called proteins, and the muscles and other parts of the body must also have mineral salts. Finally, there are other materials, sometimes called vitamins, used by the body in small quantities.

#### WASTE BECAUSE OF UNSUITABLE QUANTITY.

We are never satisfied with the organization of a factory or mill unless the work is done in such a way as to produce the largest possible results with the fuel consumed. We are, on the other hand, very often careless about our bodies. For example, we sometimes put into our bodies more food than is necessary. We enjoy the taste of what we are eating and go on stoking the body furnace beyond its needs and sometimes even beyond its natural capacity.

It should never be forgotten that food must be disposed of in some way whenever it is taken into the body. If the supply at any given time is more than is immediately needed, the body can use a part of it advantageously by storing it for future use. There is, for example, a layer of fat under the skin which is storage material taken out of the surplus food. This fat can be taken from this storage place and used at some later time when the body is not as well nourished. There are also other storage places in the body.

It is good for the body to have a certain amount of surplus, but too much interferes with the proper action of such organs as the heart and lungs, and with the work of all the muscles.

It sometimes happens when we take in more food than the body can consume that the excess is imperfectly burned, and poisonous products accumulate and injure the body.

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1. What advantages are there in the fact that the body is able to store up some of the surplus supply of food?
  2. Certain animals are able to store up a much larger supply of their surplus food than human beings. Find out about these facts.
  3. Some animals and some plants are able to store up a water supply when it is abundant. Find out about these facts.
  4. How long can one go without the various necessities of life, such as air, water, and food?
  5. On what conditions does the selection of food depend? For example, when one is on a hunting expedition, what limitations are there to the food supply?

**FUEL FOODS—FATS, SUGAR, AND STARCH.**

Some foods can not be used to any great extent in building up the tissues of the body. They are valuable chiefly as fuel for keeping up the heat of the body and supplying its muscles with energy. Sugar, starch, and fats are usually looked upon as chiefly fuel foods.

It is impossible to feed the body properly on these fuel foods alone because they do not supply the elements which are essential to growth and repair. The inhabitants of Bengal mentioned in an earlier paragraph are badly nourished. One reason is that their food is too largely fuel food. The experiment has often been tried of feeding animals exclusively on a fuel diet, but the results are always disastrous. The strength of the animal diminishes, and unless the diet is changed the animal will die prematurely.

Fuel foods are subdivided into two classes, fats and the substances known as carbohydrates. Fats are supplied by both animal food and vegetable food. Some examples of the most common fats are butter, suet, tallow, lard, olive oil, cottonseed oil, and other vegetable oils. The chief carbohydrates are sugar and starch.

**PROTEINS.**

The second general class of food substances is the proteins. The proteins are among the necessary elements for building up the muscles and the other tissues of the body. If we go back to our comparison with the engine, we may consider the proteins as the steel and iron out of which the engine is constructed. The steel and iron gradually waste away. In an engine it is necessary ultimately to replace the parts. In the body this process of wear and replacement is going on all the time. The proteins also have the property of being usable as fuel.

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1. Look up a list of different fats which can readily be secured as a part of the ordinary food supply?
  2. What are some of the other uses made of fats besides for food?
  3. Mineral oils can not be used for food, but by substituting them for animal oils and vegetable oils the food supply of the country is conserved. Give examples that will show the truth of this statement.
  4. Prepare a list of the foods which are made up chiefly of carbohydrates.
  5. In what foods is there a great deal of starch? Where does the pure starch used in the family come from?
  6. What are the qualities of wheat other than those considered in the text which make it good food material?

The amount of protein in the body of a person weighing 150 pounds is approximately 27 pounds. The proteins may be derived from vegetable as well as from animal food. For example, such vegetables as peas and beans contain a great deal of protein. Wheat and other cereals have some protein value; corn has almost as much as wheat; oatmeal a little more. They are all moderately good sources of protein when eaten in large quantities.

Lean meat of any kind, milk, cheese, fish, eggs, beans (except string beans), and peas contain a great deal of protein. A pound of medium fat beef round contains about three ounces of proteins. An egg contains about a quarter of an ounce. A glass of milk contains about one-fifth of an ounce. A pound loaf of white bread contains one and a half ounces of protein.

There is no protein at all in sugar, in fats or oils. Butter contains practically none.

The question of how much protein a person needs every day is one that has been very much discussed by investigators of foods. It is agreed everywhere that a grown man needs at least 2 ounces a day and most authorities increase or even double this amount. In general, it is also agreed that for a growing child not less than one-third of the proteins required daily should be taken from animal foods. Milk and eggs are even better for the child than meat.

#### MINERAL SALTS.

A third class of foods which are required by the body, though in relatively small quantities, are the mineral salts. There are about 7 pounds of mineral salts in a body weighing 150 pounds. A large part of this salt is of the same type that we use as table salt.

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1. The statement is sometimes made that the domestication of animals was one of the longest steps ever taken in the advancement of civilization. Show how this statement applies to the food supply of a nation.

2. What are some of the indirect methods by which animals supply us with food? What else do they supply?

3. The statement is frequently made that the high prices which are paid for meat at the present time are resulting in such a destruction of the cattle of the country that the Nation will suffer later. In what ways will the Nation suffer later through the excessive slaughter of cattle and sheep?

4. Primitive man got much of his food by fishing and hunting. Which of these industries is still of importance and why has it outlasted the other? .

There are, however, other minerals needed in the body, such as iron. The total amount of iron in the body is about as much as would be needed to make a very slender ring around one's finger, but it is one of the most important elements in the body. It is essential to the building of the red corpuscles in the blood. If iron is lacking, the blood can not do its work, and the person suffers from a diseased condition known as anaemia.

Most of the salts which are needed in the body are widely distributed through nature and come to us in almost all kinds of food. There are, however, none in pure sugar or pure oils. Three of the important substances of this class, which are not universally distributed and are very necessary to the body's welfare, are iron, phosphorus, and calcium. It is of the highest importance, therefore, that one's diet be so selected that it shall provide these important elements. Eggs, meat, and milk are good sources of all three, except that milk does not contain enough iron, and meat does not contain enough calcium. Legumes, and cereals if used with their bran, are good sources of all three.

#### VITAMINES.

A fourth class of food substances which are present in the body only in very minute quantities have recently come to be recognized as of the greatest importance. These have been called "vitamines." The amounts of these substances necessary to suffice for some days are very small, hardly more than a few specks of dust. Yet without them animals do not grow properly, and if the lack of vitamins continues strange diseases develop which are fatal to life.

Some of this material is contained in ordinary butter, but not in lard nor the substitutes for butter which are made from vegetable oils and fats. If a child is fed with butter or with one of the suitable substitutes, it grows normally and is able to use the

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1. How do animals exhibit the demand of their bodies for mineral salts?
  2. What are the chief sources of the salt supply in the United States?
  3. Many countries have a much smaller salt supply than we have. This is especially true of some of the countries in which ancient civilizations flourished. Can you find any evidences in the Bible that the Hebrews prized salt very highly?
  4. The bones of little children are soft and cartilaginous. What does this show with regard to the character of the food which they need?
  5. What is the difference between whole wheat flour and ordinary white flour?



rest of its food in a healthy way. If the necessary substance is not given because the child is fed too largely on vegetables, including vegetable substitutes for butter, growth will be delayed and the whole physical life of the child will suffer.

It has been found that vitamins are sometimes destroyed in the preparation of food. For example, it is necessary to pasteurize milk in order to free it from dangerous bacteria, but the process of pasteurization may partially destroy some of the vitamins. If pasteurized milk is to be used for infants, it is often necessary to supplement the milk by giving the child orange juice, prune juice, or other foods which supply the vitamins.

#### A COMPLETE DIET.

Enough has been said to make it evident that the intelligent selection of a diet means the putting together of a great many different foods. The proportions in which these foods are mixed must also be right or the body will suffer because it can not dispose of those elements which are supplied in excess, and its essential parts will not be kept in repair.

#### AN ECONOMICAL DIET.

There is another phase of the situation which must not be overlooked. Food materials have to be selected by people under our modern conditions with due regard to the cost. Some food sub-

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1. Substitutes for butter are very frequently provided on the market. Sometimes laws have been passed restricting the distribution of such substitutes. Some of the laws are altogether unwise. What would be justification for legislation against substitutes?

2. What is the process by which milk is pasteurized?

3. Indicate some of the limitations on diet that result from the cost of food. In answering this question, distinguish between different classes of people.

4. Make out the menu for a meal which provides all the different food substances.

5. Make out another menu which may be described as an unsatisfactory meal of the sort which sometimes appears on the table.

6. The Army is employing experts to see that the food in every cantonment is of such a character as to give the men all of the different articles of diet that they need. What steps has the Government taken to provide for the proper nourishment of people not in the Army camps?

7. Is it more important that an army should be well fed than that ordinary citizens should have a proper diet?

stances are very cheap, and there is a tendency to use these, often to the undue exclusion of other forms of food which would be better for the body. The poor white people in many sections in the South live on salt fat pork, corn, and molasses. These foods are cheap and apparently gratifying to the taste, but they make up a very incomplete diet. In many city families the case is hardly better. The food consists of baker's bread and cakes, lard, fat meats, sirups, and cheap candies.

In both of these cases the diets should have in addition milk or fresh meat or eggs to supply animal proteins and vitamins. They should also have fruits or vegetables to supply mineral salts and more vitamins. Whole-wheat breads, and oatmeal and other cereals which are not too highly milled, would also be helpful.

In thinking of foods and their cost people ought to know that milk is essential in a child's diet, and very desirable in that of a grown person. It is a cheap food even at present prices.

Many cheaper cuts of meat are good sources of protein. Beef shoulder and neck, parts of the flank, the heart, and soup meats in general are just as rich in proteins as the higher-priced cuts.

The vegetable vitamins and salts which are cheapest are usually found in apples and bananas and the winter vegetables, such as cabbage, turnips, squash, carrots, and parsnips. In summer green vegetables and fresh fruits are in season, and these are especially valuable.

An adult's diet does not require as much animal fat as that of a growing child. Vegetable fats and oils can, therefore, be used to a great extent for adults. The child must have in addition either plenty of whole milk or butter or eggs.

If such facts as these are known and acted on in purchasing and using food, it is quite possible to have a complete and wholesome diet at no greater expense than some of the incomplete diets now common.

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LESSON B-8. FINDING A JOB.<sup>1</sup>

Whatever waste of materials there is in industry and in the home, the most serious type of waste that can be found is that which comes when human beings are out of place. If anyone, old or young, gets into a position for which he is not suited, he will interfere with the work of everybody with whom he is associated. He will be unhappy himself and he will not help the community as he might if he were in some type of work for which he is fitted.

## VARIOUS KINDS OF MISFITS.

There are certain kinds of work which the community has to have done, such as digging ditches and carrying bricks, which require no training or skill. To put a trained person into one of these kinds of work is to waste all of his preparation. It would be quite as bad to put into a position requiring knowledge a person who is untrained. Sometimes a father gets his boy a position through influence and the boy is unable to hold it because of lack of preparation.

There are other cases where people do not fit well into the scheme of life of the community. There are positions open in the business world which offer to a young and untrained person wages which seem at first to be very attractive, especially in view of the person's lack of training. These positions do not in some cases lead to anything beyond in the way of an improved opportunity for work and earning. Such positions are commonly referred to as "blind-alley" jobs. If a boy, for example, becomes a messenger, he ought to ask himself whether that particular opportunity promises to give him later an opening which is better than the one with which he began. If not, the position is a "blind-alley" job. If a girl is considering whether or not she should drop out of school and go into a factory to paste labels on boxes, she ought to ask herself whether it is worth while to give up her training for the wages that she can earn; for pasting labels is not likely to offer her any opportunity for personal development.

Everyone who is looking forward to entering an occupation ought to think carefully about the dangers which have been mentioned

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<sup>1</sup> Prepared by Ernest W. Burgess, assistant professor of sociology, University of Chicago.

The lesson aims to show the importance of conserving human beings. Personal applications are suggested which should lead the student to give thoughtful consideration to the selection of his own vocation.

and ought to make his choice with the fullest knowledge of possible opportunities that he can obtain.

#### HOW THE PROBLEM OF CHOOSING A VOCATION AROSE.

The freedom of vocational choice of American boys and girls is so unlimited that it is hard for them to realize that only in the last century has youth become free to select occupations. In savage tribes there are only two groups of occupations. These are determined by sex. The men hunt and fight. The women sow the seed and gather the crops and prepare food for the family. A long historical process, known as specialization, has been going on, leading up to the great variety of occupations in modern life. While specialization has been leading to many types of occupations, other changes have led to a freer choice of occupations. There was a time when the worker had absolutely no choice about what he should do. The worker was in early days very commonly a slave captured in war. The conqueror became a member of the leisure class, and the slave was forced to do whatever the conqueror imposed upon him. Sometimes he became a tiller of the soil, sometimes a builder, sometimes a maker of clothes. He was provided with food and shelter by his master, but he had no liberty in selecting his occupation.

Even after slavery passed away, the freedom of choice continued to be very much restricted. It is still commonly true in the older civilizations of Europe that the son takes up his father's trade. In this country opportunity of choice has come to the individual as a part of our freer national life.

#### AN EXAMPLE OF POOR EMPLOYMENT.

The freedom which we have in the United States sometimes leads to unfortunate consequences. There is a story of an Italian boy of New York, told in the journal called "The Survey." The

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1. Give other examples of so-called unskilled labor and of "blind-alley" jobs.
  2. Some countries have a rigid caste system. Find out how this affects industries and other phases of community life.
  3. Find out how some of the older members of your family came to choose the occupations in which they are now engaged.
  4. Make a list of the occupations which you would prefer and tell the advantages which you find in each of them.
  5. Specialization is said to have passed through (a) the differentiation of occupations and (b) the division of labor within each occupation. Find out what these mean.

same kind of a story can be told of the industrial experience of thousands of boys.

On the last day of last January John Panello, aged 15 years and 5 months, graduated from a public grammar school in New York. On the 20th of February he got his "working papers" from the board of health. In school he had been fond of arithmetic, and from childhood had wanted to become a bookkeeper. But the classroom had become irksome to him, and his parents, financially comfortable, had just "taken it for granted" that he would go to work after graduation. He received no answer to his first application for a job—that of office boy in a place where he hoped that he might work up to a position as bookkeeper. . . . After three weeks of looking for work he got a job as errand boy for a dyeing and cleaning establishment. Five dollars a week were the wages, and tips amounted to a dollar or two extra. At the end of one week the boy who had had the job before came back and John was fired. . . . After a day's hunt he saw a sign "Boy wanted" and was taken on by a firm manufacturing ladies' hats. Here he swept the floor, ran errands, and helped to pack. At the end of two weeks . . . he left, because "a feller who had been there four years was getting only \$6 a week."

Before leaving, he had been lucky enough to get a promise of a job with a millinery firm. At first his work consisted in "going for stuff to the first floor," then he ran a crimping machine, and next was detailed to "get the cord downstairs for the men who make rugs." After a week and a half of this . . . "another feller said, 'Come along and learn carpentry,' " so John got a job at loading and unloading wagons for a firm that made wooden boxes. . . . When he learned that the boss was going to move to Staten Island, he decided to quit. . . . He had been with the firm two weeks.

During the next three weeks John did five different kinds of work for a manufacturer of jewelry and notions. He was making \$4.50, but when a man said, "Come along, I've got an office job for you," he quit. The "office job" consisted in acting as shipping clerk, running errands, answering the telephone, and sweeping the floor for a manufacturer of artificial flowers. He is still there, getting \$5 a week. He doesn't think much of the work. "What can I learn?" he asks.

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1. By comparing the various positions held by John Panello, find out what there was about all of them which made them undesirable. Also show how much training each one required.

2. It is sometimes said that experience in the business world is the best kind of education. Was this true in the case of John? What kind of business experience is really helpful?

3. How are the wages paid for services related to the training which an individual takes into occupations?

4. "Education is an investment." Show what is meant by that.

**AN UNWISE REASON FOR CHOOSING A VOCATION.**

Sometimes a choice is made with more show of reason than in the case described, but the reason is not a wise one. Thus a boy or girl goes into a vocation because he is supposed to have a special talent for that kind of work, but the supposition is not well grounded in fact. A little boy from the poorer districts of a city came every free day to the Art Museum to gaze admiringly at the paintings. His unusual interest in art was brought to the attention of a group of well-to-do women. In the conviction that the boy would some day become a great artist they raised a fund to give him lessons from one of the best art teachers in Chicago. A few weeks later the art teacher reported to the women that the boy was incapable of learning even the simplest principles of drawing and was absolutely lacking in color harmony. His love for art did not mean that he had a natural aptitude for drawing and painting.

**WISE METHOD OF CHOOSING.**

The wise method of choosing a vocation is, first, to make a careful study of the kinds of openings that are to be found. Occupational opportunities differ with localities. In a mining district, for example, there is one set of opportunities; in a manufacturing city, a very different set.

One hardly realizes, until he takes up a study of the matter, how many different occupations there are. The index to occupations in use by the United States census now includes about 17,000 different names of different kinds of work. The report on "Occupational Statistics" for 1910 refers to 428 specific occupations or occupation groups. The chief divisions under which all these occupations are classified are as follows: Agriculture, forestry, and animal husbandry; extraction of minerals; manufacturing and mechanical industries; transportation; trade; public service (not elsewhere classified); professional service; domestic and personal service; clerical occupations.

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1. One of the very common ambitions of boys is to become electrical engineers. In some respects this ambition is not unlike that of the boy of the Art Museum. Show why by finding out how many opportunities there are in this line.

2. Girls have much greater difficulty in finding a variety of occupations than boys have. Why is this so? What are the occupations open to girls? Which are the most profitable?



In addition to finding out what the opportunities are, one should find out as a second important set of facts what are the requirements in each occupation. So important is this type of study that careful lists have been made of the personal qualities which are required for certain callings. The following table gives an illustration of conditions of efficiency and success as adapted from an outline prepared by Frank A. Parsons, the pioneer in the field:

Business manager.	Teaching.	Secretarial work.
Skill of hand and eye. Accuracy, loyalty, hearty obedience to orders. Working as if owner of business. Knowledge of the trade. Executive power, system. Knowledge of human nature. Ability to get along with men and to get the best out of them. Sympathy, appreciation. Firm, kindly, tactful discipline. Organizing ability.	Love of work. Enthusiasm. Sympathy with and interest in young people. Character. Knowledge of subject. Knowledge of human nature. Knowledge of method. Health. Endurance and patience. Common sense and judgment. Tact and good nature. Memory and imagination. Inventiveness and humor.	Skill in correspondence. Reliability, courtesy. Care, accuracy. Trustworthiness. Knowledge of analytic method and research. Knowledge of business economics and public questions. Organizing ability. Tact. Energy. Push. Common sense.

Studies of vocational openings and of the kinds of ability required to fill these openings are now included in the courses of study in some of the schools of this country, especially in the upper grades and in the first year of the high school.

Furthermore, two general movements of nation-wide importance have grown out of these studies. The first is described as vocational guidance; the second as industrial education.

1. Give three illustrations under each of the chief divisions of occupations as listed by the United States census.
2. Try to work out a list of the personal qualities required in the profession of law. Ask some lawyer to improve your list. Work out another list for an occupation in which you are particularly interested.
3. Do you think it would assist a business manager in the selection of his employees if he had every applicant for a job check off on a list the personal qualities in which that applicant regarded himself as above the average?
4. Among the qualities set down for the business manager, which do you regard as most important?

## VOCATIONAL GUIDANCE.

The movement for vocational guidance had its origin in Boston. Mr. Frank A. Parsons addressed a gathering of all the boys who were leaving the elementary schools. He wanted to find out whether the boys had plans for the future. He soon discovered that they knew practically nothing of the industrial world into which they were going; nor had they considered their own aptitudes or interests with reference to what they were going to do. Mr. Parsons talked with the boys in the group and asked them to meet him individually. So successful was this first experiment that in 1908 an office called the Vocation Bureau of Boston was opened by Mrs. Quincy A. Shaw.

## THE BOSTON BUREAU.

The methods of this pioneer bureau were simple. The vocational counselor asked the boy who came to him for advice to fill out two papers. The first was a statement of the principal facts about himself that had any bearing on the vocational problem. The second was a self-examination in which the boy wrote down what he could about his own abilities in answer to a series of questions. The boy at the same time submitted his own choice of a vocation. On the basis of these papers the counselor made an analysis of the choice suggested by the boy, taking into consideration his home surroundings, his temperament and natural equipment, face and character, education and experience, and his dominant interests. With this information in mind he carefully considered the entire industrial field to make sure that the occupation proposed suited the interests and capabilities of the boy. When once a decision is reached, the counselor talked frankly and freely to the boy, pointing out what traits need development.

The bureau, after helping the boy to find a place, followed him in his first position and studied more closely his ability to do that

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1. It is sometimes said that specialization has gone so far in industry that it is useless to offer vocational guidance. Do you see any reason for such a statement?

2. Make out a list of the qualities which you possess that in your judgment should help you to decide the occupation which you will enter.

3. What other advantages besides mere success in earning wages come from a proper choice of occupation?

4. If a person knows the reasons for his choice of a vocation, what advantages does he have in the way of opportunity for self-training?

particular kind of work. If, after a fair trial, he did not succeed well, a change was recommended.

#### THE CINCINNATI BUREAU.

The work of this first bureau has been much enlarged in other cities. The school system of Cincinnati has a group of scientific experts who make a study of children about to leave the schools and keep in contact with the children after they enter occupations. Various measurements are made of abilities of the children. Studies are also made of the different occupations and the effects which they produce on workers. In these and other ways the effort is made to fit children to the demands of the occupations.

#### VOCATIONAL EDUCATION.

The second great movement is that which aims to prepare young people for success in the different industries by special courses of training. Many different kinds of vocational courses are now offered in the schools of different States. Indeed, the Government of the United States has appropriated a large sum of money which is used in training teachers who are to give vocational courses and in the organization and equipment of schools for these special lines. Some vocational courses prepare directly for special trades. Others are intended to acquaint pupils with the general scientific facts on which industries are based and with the general facts about country and national life which are important for success in any occupation.

Agricultural and domestic science courses are not to be overlooked in this description of special forms of training for vocation. Nor should one forget that the various professions, such as law and medicine, have always been in the minds of teachers when preparing courses of study for schools.

#### EMPLOYERS ADOPT WISER METHODS OF SELECTION.

While people who are going into industries are thus becoming wiser in their selection and better prepared for their work, em-

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1. What vocational courses are offered in your school?
  2. Is it proper to speak of reading and geography as vocational courses?
  3. There are some factories and other business establishments which give special education to their employees. Find out about such plans of education.
  4. Why should the Government of the United States appropriate money for vocational education more than for teaching reading and spelling?

employers are adopting new methods of selecting their workers. The methods are not entirely new. For many years railroads have carefully tested men before employing them as engineers. The United States puts aviators through the most rigorous tests before enlisting them. Managers of industry are beginning to make tests on a larger scale.

In some cases these tests have been carried very much further. Measurements have been made of the quickness of reaction on the part of workers. For example, in a bicycle factory an efficiency expert measured the speed with which 120 girls engaged in inspecting balls did their work. The girls who were slowest were discharged, and the final result was that 35 selected girls working for a short day did the work formerly done by 120 girls. This permitted almost a doubling of the wages of the girls who were employed and a reduction in cost to the factory even after this increase in wages.

Sometimes these tests bring out information with regard to an occupation that would hardly have been possible without the careful study made by the test. It used to be assumed that the quickness of finger action is of chief importance in setting type with a type-setting machine, but a series of tests made with users of these machines brought out the fact that the number of words which can be carried in a man's memory is of much greater importance for success than the rapidity of his finger motions.

These examples show some of the efforts which are made to fit individuals to those kinds of work for which they are best suited, in order to avoid the waste of human energy which always follows unwise choice of a vocation.

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## Chapter III.

### MACHINE INDUSTRY AND COMMUNITY LIFE.

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The living things of the earth, the currents of the air, the falling water in the streams, the expansiveness of steam, the force of electricity, and the explosions of dangerous substances have in turn been required to lend their aid in performing the tasks of man. His mastery over nature embraces but an insignificant part of her mighty forces, but that part multiplies a thousand fold and more the work which man can accomplish. The mechanical devices by which this result is reached have been evolved gradually. Their development has come almost entirely within the past two centuries, and it has been accelerated with the passage of years, for each improvement suggests many others.

The quick communication of intelligence between distant places has been important in all degrees of civilization, and it became increasingly necessary with the industrial development of the past century. It is characteristic of the age that inventions and discoveries in many fields proceed with equal steps. With many trained minds employed upon a great problem, the solution has not usually been long delayed. If Morse had not invented the telegraph in 1837 some one else would, in all probability, have done so within a few years at most; others were at work upon the problem of transmitting the human voice when Alexander Graham Bell announced the invention of the telephone, and judicial decisions were necessary to determine all the rights in the matter. The need existed and the inventions followed. And the President, in Washington, may now communicate with the armies in France more easily than Napoleon could communicate with a regiment a half mile away.

The machine and the factory have done more for the home than merely to lighten its labors. They have taken away its laborious tasks; but they have also taken away the women who had performed those tasks. Women still make the cloth for the family's garments, but they make it within the walls of the factory.

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#### LESSON B-9. HOW MEN MADE HEAT TO WORK.

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No machine can do its work without power. What would a locomotive be able to do if there were no fire under its boiler? What would a factory be worth if the wheels stood still? The invention of machinery has always required at the same time the discovery of some kind of power to do the work.

#### ANIMALS AS SOURCES OF POWER.

At first man learned to add to his own strength that of the animals. The Eskimo trains his dog to help him draw the sled

over the ice. In the ancient world and even down to modern times the ox has been a helper on the farm and on the journey. The natives of India use the elephant to help them carry their burdens and to lift logs for them in their lumbering. The horse has long been used by man; in the early days only for what were considered the more important and nobler services, such as carrying man himself, and in warfare.

Without the added power which comes from animals, many of the modern industries would be impossible. Try to imagine what a farm would be without oxen or horses, and it will be evident at once that man has used his brains to help his own comparatively weak muscles in conquering the soil.

#### POWER FROM WIND AND WATER.

After animals came the harnessing of the wind and water. In the earliest days of history we find that man knew how to use the wind to drive his boats. The war boats of the Greeks and Romans were driven by oars because the demands of naval warfare made it impossible to rely on the uncertain wind, but the merchant boats which did not have to move with regularity were carried along with the help of sails.

Still later the wind was harnessed by the windmill and was used to grind the grain, thus helping man in what had been up to that time one of the most laborious of his tasks.

After a time man learned to use the power of the swift streams to do his work for him. Water is even now one of the most im-

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1. What are the differences in power between people? Compare a man and a boy, for example.

2. Several people sometimes work together in the effort to produce power. Give examples.

3. In dealing with the use of human power and other kinds of power in industry, the matter of costs must be considered. What does it cost to use horsepower on a grocery wagon, for example? Is it more or less expensive to use an automobile? Or make the comparison for a thrashing machine or a churn.

4. Find other examples than those in the text of the use of animal power.

5. Warships are always supplied with the most effective power that can be secured, regardless of expense. Show that this is true of a modern navy.

6. Where are windmills common to-day? Explain the reason.



portant sources of power. The building of great electric plants in mountain regions where water power is abundant promises to be increasingly a source of profit to man and an aid to industry.

#### INVENTION IS STIMULATED BY THE DISCOVERY OF POWER.

With every new kind of power which he has taken into his service man has found new reasons for making tools and machinery. The ox could not till the soil without the help of a plow. The plow is a kind of hand supplied to the animal by the wisdom of man. It would be hard to decide which required the greater intelligence on the part of man, to make the plow or to tame the ox. In the same way the use of wind to drive a boat means making a sail and setting up a mast in the boat. The power of the river can be used only by the man who can invent a water wheel. Machinery needs power to drive it, and power is of no use until it is harnessed by machinery.

#### HEAT AS A SOURCE OF POWER.

There is one kind of power in the world which it took man a long time to learn to use as a helper in his work. That is heat. The comfort that comes from a fire and the usefulness of a fire in cooking food were known to man in the earliest ages, but the use of heat to lift weights and save human strength was possible only after man had gone a long way on the road of invention.

Heat probably never would have been harnessed and set at work by man if he had not found coal and by its use been able to produce a very hot fire which gave him abundant heat that could easily be put wherever it was wanted.

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1. Water power is costly because of the large investment of capital which is involved and because of the cost of transportation. Explain both these statements.

2. Water power is a great conserver of coal. Show why.

3. Water power is dependent on the sun's heat. Show why.

4. Why are electric plants rather than mills built near water-power sources?

5. "The course of invention has been from that which was obvious to that which could not be seen without the aid of science." Show that this is true especially in the use of heat.

6. Heat is present all about us. Why can the heat from the sun not be used to run a factory?

7. What is the source of the heat which comes from the burning of coal?

The first successful method of using heat for power was devised in the Cornish mines in England in the seventeenth century, 100 years before the American Revolution.

In the extreme southwestern end of England there are tin mines which were famous even in the ancient world. These mines could be worked only when they were kept free from water. We are told that pumping out the water from one of these mines required the labor of 500 horses and the men to drive them.

#### SAVERY'S ENGINE.

In 1698 Thomas Savery secured a patent for a pumping device which was the first steam engine. It did not look at all like a modern engine. It had no wheels or moving shafts, but it used heat to do work. The work that it did was to suck water out of the mines. It made the heat from a coal fire do what men and horses had done before.

Savery's engine consisted of a tank which was connected with a steam boiler on one side and on the other side with a pipe leading into the mines from which the water was to be pumped. The tank was first filled with steam. This drove out all the air by filling the space inside the tank with the hot vapor. The steam valve was then shut and a stream of cold water was poured over the hot tank. This condensed the steam very rapidly. The important fact to remember about steam is that 1,700 cubic inches of steam will condense into a single cubic inch of water. When Savery's tank was cooled off the space that had been filled with steam was turned into a vacuum. He then opened a valve into the water pipe and the water was sucked up into the tank.

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1. What is the principle involved in constructing a pump?
  2. Savery's engine could draw water up only about 20 feet. Why?
  3. It is easy to see why a mine is compelled to pump water constantly. How is a modern mine cleared of water?
  4. Do other substances besides steam shrink in bulk when they are cooled off?
  5. What practical applications are made of the property of substances referred to in the last question?
  6. Does water decrease in volume when cooled?
  7. What devices are used in the modern world to produce vacuums, and what practical applications are made of these devices?
  8. Does the air about us have weight? How can the answer to this question be proved experimentally?
  9. What is the pressure of air inside an automobile tire? In a bicycle tire?

After water was in this way drawn into the tank, the water pipe was shut off and the steam valve was opened again and at the same time an outlet pipe was opened through which the water could be forced out of the tank. The new steam coming in drove out the water and at the same time filled up the tank ready for the next pumping by condensation.

#### NEED OF GREATER ECONOMY.

Savery's engine was by no means economical of fuel. It is easy to understand what we mean by the statement that a machine wastes power. If a man who is trying to lift something can not get hold of it in such a way as to apply all of his strength, his lifting will be very wasteful. We try to make it easy to lift things by putting handles on them. Handles are inventions intended to save human energy. In exactly the same way when a machine can not concentrate its power as it should there will be a waste. Savery's engine was wasteful because the tank had to be first heated and then cooled, and a great deal of power went to waste.

It has been calculated that Savery's engine so used steam that he got out of it only about one-twentieth of the work that can be secured from the same amount of steam in a modern engine. Even a modern engine does not use all the power that there is in steam. Anyone who has seen the steam escaping from a locomotive will realize that a good deal of heat is wasted even in the most perfect modern engine.

#### NEWCOMEN'S ENGINE.

The problem of saving heat and using it to the best advantage has been one of the reasons for constant improvement in machinery.

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1. Discuss the general problem of economy, reviewing earlier lessons. What are some of the devices of legitimate economy practiced in industry?
  2. Mention as many inventions as you can which have economized (a) human energy, and (b) energy in general.
  3. Where have you seen power wasted? In mills the machinery is kept running at times when it is not in actual use. Is it always economical to shut off power?
  4. In modern shops of certain kinds each machine is supplied with a separate electric motor. Why does this make for economy?
  5. Find out what part of the power of steam is utilized by a modern engine.
  6. What becomes of wasted heat?
  7. Friction produces heat. Why?
  8. Can heat be stored up?

Within a few years after Savery had invented his engine a new pumping engine was invented by Thomas Newcomen. In 1705 he patented an engine which consisted in a piston that worked up and down in a cylinder. Steam was admitted beneath the piston. This forced the piston up. The power of the upward moving piston was applied by a cross arm to a pump. In order to bring the piston back again in Newcomen's engine, the steam had to be condensed by cooling the cylinder. As soon as this steam was condensed, the piston fell back again and the cross arm attached to it was carried with it. This mechanism worked very much better than Savery's pump and came into extensive use in pumping water out of mines.

#### AUTOMATIC ENGINES.

The valve which was used to let in the steam was operated by hand. This was a boy's work, and we are told that in 1713 a boy named Humphrey Potter saw the possibility of connecting the valve by means of a cord with the moving parts of the engine and in this way relieving himself of the necessity of opening the valve each time the steam had to be admitted. The engine was thus made to run itself. We speak of an engine that does this as an automatic engine. All modern engines are automatic. The moving parts admit the steam at the right moment and the steam in turn drives the parts which do the work.

Many pumping engines of the Newcomen type were manufactured. They made possible in Cornwall the enlargement of the mines. In some cases the mines were sunk to twice the depth

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1. Find out about cylinders and pistons by looking at a modern engine.
  2. What is the difference between a gas engine and a steam engine?
  3. Could steam be used to drive an automobile? An aeroplane?
  4. The cross arm is used in modern machines. Give examples and show how it works.
  5. What is a valve?
  6. Mention as many automatic devices as you can.
  7. The limit of automatic machinery is reached when successful operation depends on the presence of intelligence. Describe a number of cases where automatic devices will not work.
  8. Is reversing an engine ever automatic? Can all engines be reversed?
  9. Describe automatic devices which depend on electricity.
  10. When weight clocks were substituted for sand glasses men were relieved of the necessity of watching. Explain.

that was formerly possible, and thus opened up rich stores of new ore. A very large engine with a cylinder 66 inches in diameter and a stroke of  $8\frac{1}{2}$  feet was built to empty the great dry dock at Kronstadt constructed by Peter the Great. Before this engine was completed the dock was emptied by two windmills, each 100 feet high. They required a whole year's time to empty the dock once. Even this new engine was very wasteful of power, and industry had to wait for a later inventor to make the improvement most important for the general use of steam power in industry.

#### JAMES WATT AND THE STEAM ENGINE.

Accident plays a great part in the history of men and even of nations. James Watt (1736-1819) was not permitted by the guilds or trades-unions to open an instrument-maker's shop in Glasgow. As a result he secured employment at the University of Glasgow to repair apparatus. A model of a Newcomen engine was brought into the shop for repair. Watt at once saw that to work properly a steam engine should work always hot instead of alternately hot and cold, as engines previously invented had operated. He realized that steam, and hence fuel, could be saved and an engine be made capable of doing more work by keeping the cylinder and working parts of the engine hot. He therefore introduced a separate condenser which accomplished the result desired.

#### THE DOUBLE-ACTING ENGINE.

The original piston steam engine of Newcomen and Watt resembled our modern gas engine in the fact that its cylinder

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1. Find out what changes in the manufacturing world followed the invention of the steam engine.
  2. How soon was steam applied to transportation and by whom?
  3. What are some of the uses of steam power in your town?
  4. Are other sources of power used in any of the manufactories in your town?
  5. What is done in the modern engine with exhaust steam?
  6. Find out about some of the inventions and inventors following Watt. Who was Corliss? What is an eccentric?
  7. What is the horsepower of the most powerful engines?
  8. What horsepower can a man pull?
  9. How do wheels on a cart lessen the pull required to move a load?
  10. What devices were used for moving loads before wheels were invented?

was closed at one end only. The force due to the steam was all applied inside the closed end. In economizing steam Watt closed both ends of the cylinder and then applied steam alternately on both sides of the piston. Since that time engines have been double-acting; that is, steam is admitted first at one end, then at the other end of the cylinder. Watt also made use of the expansive power of steam, though it remained to later inventors to perfect the high-pressure, noncondensing steam engines which we are accustomed to use.

Since that day invention after invention has improved and perfected the steam engine until we have the powerful engines of modern times.

What the engine does for us can be made clear by one or two comparisons. Thomas Savery used the word "horsepower" in telling about the work of his pump. James Watt took over the word "horsepower" and gave it a more exact meaning. He estimated that the average cart horse of London could travel at the rate of  $2\frac{1}{2}$  miles per hour and at the same time raise, by means of a rope led over a pulley, a weight of 150 pounds. This is equivalent to raising a weight of 33,000 pounds 1 foot high in one minute. When we say, then, that a locomotive has a horsepower of 1,500 we mean that this locomotive has 1,500 times the power necessary to raise 33,000 pounds 1 foot, or the power of raising 49,500,000 pounds 1 foot in one minute.

The same kind of truth can be put in another way by comparing the carrying power of a freight train with the carrying power of men. A freight train can carry more wheat from Kansas City to Chicago in a given time than could be transported on the backs of 1,000,000 men.

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LESSON B-10. TELEPHONE AND TELEGRAPH <sup>1</sup>

An Indian stood looking at the distant horizon. He was watching intently some puffs of smoke that rose like little patches of cloud and melted away into the blue sky. The striking fact was that the smoke did not rise in a steady column, but in puffs with clear intervals between. The Indian recognized in them the signals of his tribesmen. He knew that a buffalo skin was held over the fire and that from time to time it was drawn aside so that a puff of smoke could rise. Then the skin was held over the fire again to interrupt the smoke. The number of puffs and their length had been agreed upon and the distant observer was interpreting the message.

There have been other methods of signaling at a distance. The modern wigwag of the military signal service is an example of a complicated system of communication devised to carry farther than the human voice. This modern method and the Indian's smoke signal show how eager man has always been to overcome space.

## MECHANICAL DEVICES FOR COMMUNICATION.

The real conquest of space had to wait until mechanical inventions reached a high state of perfection. When wires and batteries and other means of harnessing the electric current were well known to science the time had come for a man of genius to give to the world a highly perfected means of communicating at a distance. We do not always think of the telephone and telegraph as machines, but such they are. They are no less machines than the dynamo that develops the electric current or the motor which drives the trolley. Some one has called them machines for overcoming space.

## THE INVENTION OF THE TELEPHONE.

The telephone was invented in 1876 by Alexander Graham Bell, a teacher of vocal physiology in Boston University. He was a thorough student and knew what was known in his day of the physics of sound and electricity. He had spent much time and effort trying to find a way of sending several messages at one time over a single telegraph wire. While working on this problem he

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<sup>1</sup> This lesson was prepared by W. C. Reavis, Harris Teachers College, St. Louis, Mo. It deals with the mechanical devices which make possible communication at a distance. It shows that mechanical invention is a broad term and includes much besides ordinary factory machinery.

discovered how to vary the strength of a current of electricity without breaking it. He applied his discovery to the problem of transmitting the voice. Within 60 days after he began to perfect his instrument he was far enough advanced to exhibit it to the public at the Centennial Exposition in Philadelphia. At first it received little notice, but toward the end of the summer of 1876 it began to attract great attention. It was regarded more as a freak toy or parlor novelty than as a useful instrument. Its real usefulness was not even dreamed of, except by the inventor himself.

The growth of the telephone as a practical invention was at first slow, like many other inventions; but gradually its usefulness dawned upon the public. People found that it was a great convenience to be able to send and receive news quickly, and the business world discovered that business could be conducted with the telephone more rapidly and successfully. To-day, we see so clearly its importance that we call telephone companies "public service" companies. Some countries have felt it wise to have the telephone and the telegraph operated by the State.

Its present wide use would never have been possible without many improvements which have been made since the days of the first telephone. By patient scientific studies, each detail has been worked out. To-day the range of the telephone is very great. Recently a transcontinental telephone line was completed, and persons in San Francisco easily conversed with persons in New York and in Boston.

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1. What other mechanical devices than the telephone and telegraph are used in communication? Are any of these used in war?
  2. Make a list of the ways in which the telephone is used in the present war.
  3. Where and how is copper produced? For what is it used in the telephone industry?
  4. What is an electromagnet? Of what is it made?
  5. In what ways is an individual's efficiency increased through the use of the telephone?
  6. How many types of telephone substations do you know?
  7. In what ways would the teaching of vocal physiology aid Bell in inventing the telephone?
  8. Why are telephone wires underground? Why were they at first carried on high poles?
  9. What "public utilities" other than the telephone can you mention? Why do we not call drug stores public utilities? They serve the public. If not every business which serves the public is to be called a public utility, what is the correct test?

## THE TELEPHONE SYSTEM.

A telephone and its connections may be considered in three divisions: The substation or single telephone, including the transmitter, receiver, and bell box, located in the home or business house of the subscriber; the wire plant, including the overhead and underground wires which connect the subscriber with the central switchboard; and the central switchboard, or terminal of all the lines of the system.

The outer appearance of the telephone substation is familiar to almost everyone, but we seldom think of the interesting internal mechanism that obeys our touch. What happens when the receiver is lifted from its hook? The signaling apparatus by which the telephone is "rung" is at once cut off and a light glows above the number on the distant switchboard. What happens when one speaks into the transmitter? The sound vibrations of the voice strike the little metal plate at the end of the mouthpiece, causing it to vibrate; this in turn produces variations or undulations in the current of electricity which is flowing along the wires. These variations reach the receiver of the person with whom one is speaking, where the process which took place in the transmitter is reversed, and sound vibrations are produced by the electric current acting on a metal plate in the receiver.

## THE WIRE PLANT AND CENTRAL SWITCHBOARD.

The wire plant of the telephone system includes all the lines that connect the substations with the central switchboard. Sometimes these wires are scattered singly on poles over the city, but there is a growing tendency to collect the wires in lead cables. Sometimes these cables are carried by poles; sometimes they are placed in conduits buried in the ground.

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1. How do the telephone and telegraph aid the civil authorities in maintaining order, apprehending criminals, etc.?

2. Make a list of instructions on how to use the telephone. How should one answer when the telephone rings? Why? How should one begin a telephone conversation?

3. What is meant by calling a telephone company a public service company? What other public service companies do we have? What is the point to the talk about "regulation of public service companies"?

5. On a map of your city or community locate the central switchboard. What are the advantages and disadvantages of its location?

6. Telephone companies advise their subscribers to be careful not to get the wires on their instruments damp. What is the reason of this caution?

The central switchboard or telephone exchange is the clearing house for all the telephone lines of a system. It is usually located in a large room and extends around the walls in a curve or hollow square.

The upright part of the board is a panel containing a large number of small holes, numbered consecutively. These holes are at the ends of the various lines of the telephone system. The horizontal part of the board is a tablelike shelf about 18 inches wide, constructed at right angles to the upright section. It contains two rows of metallic plugs attached in pairs to wire cords. These are the means by which all telephone connections are made.

#### OPERATING THE CENTRAL SWITCHBOARD.

For each hole in the panel there is a tiny electric light which glows when a subscriber lifts the receiver from the hook of his telephone. At this signal the operator puts one of a pair of the plugs in the hole below the light and then she can talk with the subscriber. After she hears the number desired, she inserts the other of the pair of plugs in the hole belonging to the number called for and the bell of the person called is rung. The light in the upright section of the board now goes out and a light on the horizontal board near the plugs glows and remains lighted until the receiver of the party called is taken from its hook. When either party replaces his receiver one of the lamps on the upright board glows to give the operator the signal that the conversation is ended. She then disconnects the plugs and they fall back to their places.

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1. What is the long-distance telephone? How does this method compare with the telegraph in transmitting messages rapidly over considerable distances?

2. Make a visit to the nearest telephone exchange and write a description of what you see.

3. What is the value of understanding the mechanism of the telephone? Can you think of any ways in which you can get better telephone service because of such knowledge?

4. How has the telephone influenced the social life of the American farmer?

5. How does the automatic switchboard work?

6. Any telephone central board is now very largely automatic. What is the advantage of this?

7. On the other hand, what is the advantage of an operator?

8. What would be the advantages of the wireless telephone? Why is it not yet a commercial possibility?

## UTILITY AND SPREAD OF THE TELEPHONE.

No mechanical invention of modern times has been more useful to society than the telephone. In the 40 years of its existence the telephone has extended its wires over millions of miles and has served millions of people. The Bell Company alone, to say nothing of the many great independent companies, had in operation in 1916 in the United States 19,850,315 miles of wire and 9,847,192 substations. It cared for approximately 29,420,000 calls daily, which means an average of 100 calls per year for every man, woman, and child in the United States. The telephone lines carry more communications than the combined total of messages sent through the Post Office Department and the telegraph service.

## THE TELEGRAPH.

The telegraph preceded the telephone in point of time about 40 years. It was a much simpler invention than the telephone, but the scientists of that day regarded it as a great achievement. The general principle of the telegraph had been known for a long time before Morse perfected his instrument, but the general principle was not useful until it was successfully applied.

## THE FIRST SUCCESSFUL TELEGRAPH.

The first successful recording electro-magnetic telegraph was invented in 1837 by Samuel F. B. Morse. The United States Government granted him a patent on the invention in 1840 and four years later voted an appropriation of \$30,000 for the construction of a line between Washington and Baltimore for the purpose of testing the practical utility of the invention.

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1. "Many dependent and related industries are rapidly developing around the telephone industry." Can you mention any such industries?
  2. What would be the effect on the business of a city if its telephone service were interrupted for one day?
  3. Of what value is the telephone in railroad service?
  4. Some one has said that the telephone and telegraph have done more to unite our people than any other devices. Is this true? Is it important that our people should be united?
  5. Get your teacher to plan debates on the following questions: (a) Resolved that the telephone renders a greater service to mankind than the telegraph. (b) Resolved that competing telephone companies render better service to a community than a single monopoly.
  6. In what respects is the telephone an educator?
  7. Why is a person's life enriched by the existence of the telephone even if he has never used one?

### THE RAPID DEVELOPMENT OF THE TELEGRAPH.

Within a very short period the success of the telegraph as a means of communication was fully established. It followed the stage coach and the railroads westward, connecting the frontier with the cities of the East. After the invention of the submarine cable it followed the steamships across the sea. Now there is scarcely a country in the world which is not in cable communication with the rest of the world.

In 1916 the Western Union Telegraph Company alone had in operation 237,668 miles of poles and cables supporting and protecting 1,627,342 miles of wire, over which more than 75,000,000 messages pass yearly.

When one thinks of the fact that these messages make possible the morning paper with its news of the world, great business transactions, and constant reports of Government officials to headquarters, one begins to realize the importance of the invention. How life was carried on before men had these rapid means of communication can hardly be understood.

### THE MECHANICS OF THE TELEGRAPH.

The mechanics of the modern telegraph are very simple; so simple, in fact, that a boy with ordinary mechanical skill can construct a telegraph with ordinary tools and at a very small cost. A common telegraph consists of but four parts: A battery, or gravity cell, which generates the current of electricity; a telegraph key, or sending instrument, for breaking and closing the current; a sounder or electro-magnetic receiving instrument which gives out sounds when the current is made and broken by the sending instrument; the wire which conducts the current from one point to another.

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1. What is the fundamental difference between a telephone and a telegraph? In what respects does a telegraph sounder differ from a telephone receiver?

2. What use does a newspaper make of the telegraph?

3. Mention other institutions which depend upon the telegraph.

4. Telegraph companies send messages as day messages, day letters, and night letters. What is the difference in the service given these different classes of messages? What is the difference in rate?

5. Find out the telegraph rate between your city and the capital of your State; between your city and New York, Chicago, Washington, San Francisco. What does a cable message cost? What determines the rate?



## THE MORSE ALPHABET.

Messages are sent by telegraph in the Morse alphabet which consists of a series of short and long sounds, known as dots and dashes, and separated by periods of no sound, or spaces. These in different combinations represent the letters of the alphabet. These signals are sent over the wire through the breaking and closing of the current by means of the telegraph key which is operated by a downward stroke of the hand. The receiving operator hears in his sounder clicking sounds made by the interruption of the current of electricity in his instrument.

## SUBMARINE CABLES.

After nine years of effort marked by partial success and failure, Cyrus W. Field, of New York, succeeded in laying a submarine cable between England and America in 1866. Since that time cables have been laid in all the oceans. The last definite figures of this branch of telegraphy gave the number of operating cables as 1,750, with an aggregate length of 200,000 miles, over which more than 6,000,000 messages are carried annually.

## THE WIRELESS TELEGRAPH.

No invention in the field of electrical instruments has created more interest than wireless telegraphy. Like the common telegraph, its principles were well known to scientists, and several partial successes were made before the invention was perfected and its practical usefulness shown by the youthful Italian inventor, Marconi.

Working with the well-known principle that electromagnetic waves travel readily and with great rapidity through ether, Marconi's problem was one of successfully starting the waves, and

1. The Government had to help Field lay his cable. Why?
2. How is a cable made and how is it laid?
3. Is the message received from a cable in the same way as in an ordinary system?
4. Why did the Government dismantle private wireless stations at the beginning of the war?
5. Receivers of the wireless systems are sometimes "tuned." What does this mean and why is it done?
6. What is an S. O. S. signal?
7. "The telephone and the telegraph have fostered business activity." Make a list of the ways in which they have done so.
8. If the telegraph, the printing press, and the telephone tend to bind people together and promote friendship, how does it happen that we are in the midst of a great war? Does the existence of the war prove that these devices do not tend to promote friendship?

of gathering them up again and recording them. For this purpose he used a sending instrument, which offered no problem, as the Morse sending instrument furnished a pattern; a receiving instrument, which presented a difficult problem; and aerials or wires that would give off the electric waves into the ether, and likewise gather them up. His chief problem was to perfect the receiver.

In March, 1899, Marconi had made such improvements in his instruments that he was able to send a wireless message across the English Channel, a distance of 32 miles. Two years later he succeeded in sending messages across the Atlantic Ocean. Since that time the Marconi system of wireless telegraphy has been adopted by nearly all civilized countries. Scarcely a ship of any importance now ventures out to sea without a good wireless equipment.

The mechanical devices which have been described in this lesson do much more than put individuals in communication with each other. To be sure, one telephones to his friend or to some one with whom he has business, or he telegraphs or cables. This is, however, a very inadequate statement of the case. The significant point is that these devices enable us to communicate with one another more quickly and more fully than was formerly possible. They have thus fostered the development of business activity and have eliminated many delays. This has made it possible for us to produce more goods.

It is even more significant that through the interchange of messages nations have been brought into close relations and through the constant interchange of ideas civilization has been promoted. In olden days ideas traveled slowly. Now they go around the world in an instant. The alphabet, the printing press, the telegraph, and the telephone are links in a chain which will more and more bind people together and promote friendship.

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LESSON B-II. THE WORK OF WOMEN.<sup>1</sup>

We have seen in earlier lessons that most of the articles used in everyday life were once made by hand with simple tools and are now made in great factories by power-driven machines. The coming of this new method of production has worked great changes in many respects. This is especially true of the activities of the household, and hence of the work of women.

The lesson on the colonial family showed what an important place the woman played in production in the days when the family made practically all the articles it used. As towns grew and trade and commerce developed, the work done by women within the households increased. The busy housewives not only supplied their own families but also utilized their spare moments in making things for the market. This work was done, as we know, in the household, with very simple tools.

The great change came about after 1750, with the introduction of power machinery. Goods could be made more cheaply in large quantities by these machines, and the household could neither afford the expensive machines nor command the power to run them.

## THE TRANSFER OF PRODUCTION FROM HOME TO FACTORY.

The result has been a steady transfer of one activity after another from the home to the factory. The textile industries were the first to go because the first successful machines were in these industries, but it has been found that the same machine methods can be applied to many other household arts. A list of all the industries which have left the home, either in whole or in part, would be very long indeed. It would include all the textile industries, the making of hats, caps, gloves, mittens, and many kinds of men's, women's, and children's clothing, carpets and rugs, soaps, drugs and cosmetics, dairy products, meat products, and various kinds of canned and dried foods.

## PREPARATION OF FOOD.

Of course, the ordinary household is still a busy place. Many activities have been retained wholly or in part. An example of this is the preparation of food.

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<sup>1</sup> This lesson was prepared by Hazel Kyrk, assistant professor of economics, Oberlin College. It introduces the problem of women's participation in modern industry.

The facts with regard to this phase of woman's activities are very complicated. In this country women are for the most part not engaged in the heavy work connected with the cultivation and harvesting of crops. The preparation of the food is in a measure carried on in factories, so that some foods are bought by the housewife ready to serve, while others require a great deal of preparation in the home. Into which group a given food will fall depends partly upon how readily it lends itself to machine methods, how perishable it is, whether there is a large market for it, and whether the article can be carried quickly from the producer to the consumer. City households can buy bread and cake from the near-by bakery, but country households must make their own unless there are fast trains and a good delivery system to bring such supplies from the city.

#### COOKING STILL LARGELY DONE IN THE HOUSEHOLD.

In spite of factory-prepared foods, cooking and the household work connected with it continue to be necessary parts of a woman's life. To be sure, kitchen appliances have been very much improved. The modern stove, modern cooking utensils, and domestic machinery of various sorts make unnecessary some of the heaviest work of earlier days. Even in many rural homes water has been piped into the kitchens, gas is available for fuel, and various devices for storing food, such as the refrigerator, have been made available.

The reason why cooking is still a domestic industry is clear when we consider the quantity and kinds of material that enter into the food supplies of the home. The small quantity needed makes

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1. Where did the girls of colonial households receive their training for their future work?
  2. Where do the girls of modern households receive their training?
  3. What kinds of training should modern girls have?
  4. There are many cases in modern times where a commodity is produced sometimes in a factory, sometimes in the home. Why should this be so?
  5. Why are women knitting more now than they did last year? Why not leave the work to factories?
  6. The text describes the kinds of foods prepared in factories. Find examples illustrating each statement and explain.
  7. Find examples of the differences between the occupations of country homes and city homes.

a big machine unnecessary, even if a machine could handle the situation. But in many cases no machine has yet been devised which can take the place of the personal attention that most people demand in the preparation of their food.

#### COOPERATIVE COOKING.

It has often been suggested that cooperative cooking could be used instead of domestic cooking, but the suggestion is not a popular one. It is difficult to deliver food in good condition when prepared at a common center, and there is such a variety in tastes that people are reluctant to enter on such a standardized enterprise.

During this war, however, some European communities have been driven to cooperative cooking. Perhaps the main reason for this action was that of accurate apportionment. When all food is prepared at a common center it can be distributed under authority in such a way as to give everyone his fair share. Certain economies can also be secured by this method. For example, the housewife preparing a meal for a small family would think little of throwing away a few ounces of unused vegetables and some of the fat for which her family did not care. If, however, numbers of households did this the amounts involved would make a large total, and in time of great national stress all resources must be utilized. Our own Government is hoping to solve the food problem which the war has brought upon us by an appeal to the intelligence of housewives rather than through public kitchens.

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1. Mention a number of industries outside the home which are carried on on a small scale and are not appropriate to the factory. Explain the situation in each case.

2. What effects has the war had upon the problem of the modern housewife?

3. Mention several ways in which she can help in carrying on the war.

4. Has any official appeal been made for her cooperation?

5. What things should she not buy at present for which she can find substitutes?

6. What are some of the most common sources of waste in the household in food materials? In fuel?

7. Should the economies taught by the war end with the close of the war?

8. What would be the food condition of the world if the war ended to-morrow?

## CARE OF THE DWELLING.

Another group of activities still partly left in the household are those services connected with keeping the dwelling and premises clean, orderly, and comfortable. Even some of these activities are being taken out of the home, or out of the hands of the household. For example, power laundries to some extent have taken the place of the housemother with the washboard or the laundress engaged by the day. Flat dwellers in cities turn over much of the work of "upkeep" to the hired janitor and his electrically driven vacuum cleaner. The janitor usually provides also heat and hot water and keeps the sidewalks clean. The city government cleans the streets, disposes of garbage, and offers water, gas, and electricity for sale, thus carrying on work that was once a part of private housekeeping.

## CLOTH MAKING AND GARMENT MAKING.

Another interesting case of the division of the activities of woman between the home and the factory is seen in the manufacture of cloth and clothing. The processes connected with the making of cloth long ago left the home, but the making of cloth into garments has not yet gone over to the factory in all its branches.

It is easy to see why cloth making is done in the factory. In the year 1800, 25 people could do with the aid of the recently introduced machinery as much weaving as had been done 15 years before by 1,634 people. At present Fall River, Mass., turns out 2 miles of cloth for every minute of the working day. It would require the labor of every man, woman, and child in the world—that is, the labor of more than a thousand million persons—to do with the spinning wheel and hand loom what is now done by less than a million and a half workers in this and other countries in cotton alone. The housewife can not compete with the factory in producing cloth.

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1. Mention any other domestic machines you know not included in the list given in the text.

2. In many cities there are so-called family hotels. Show how a hotel may be an institution for cooperative housekeeping.

3. Repairing garments is a small-scale occupation. Show how this statement agrees with the other statements in this lesson.

4. How does competition bring about such changes as that referred to in the text?



## THE SEWING MACHINE.

The making of the individual garments, on the other hand, has continued to be in some measure a home occupation. One reason is that mechanical inventions came much later in the sewing trade than they did in the spinning, weaving, and knitting trades. The needle and scissors were the tools used in garment making until 1850, when the first successful sewing machine came into use. After 1870 came a few other machines, which could be used to cut several garments at a time, to make buttonholes, to sew on buttons. But after all no revolutionary machines were invented in this line.

Furthermore, the sewing machine is a very different sort of device from textile machinery. It is not complicated or expensive. It is relatively easy to operate so far as power is concerned, and when run by steam or electric power it is not as superior to one run by foot power as the power loom is to the hand loom. Then, too, sewing requires closer attention than weaving. When the power loom is once set in motion the work goes on automatically until the thread breaks. Sewing, on the other hand, requires close and fairly continuous attention on the part of the operator.

## GARMENT MAKING IS SMALL-SCALE WORK.

Factory production of garments does, of course, have its advantages in turning out large quantities, but the thrifty housewife can, by using odd moments, produce certain things as economically as the large-scale producer. In other words, the work is small-scale work by its very nature and is not readily taken over into the factory.

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1. Who invented the sewing machine? When?
  2. What is the difference between men's garments and women's garments that results in making the former more commonly by the factory method?
  3. Is the manufacture of men's garments a machine industry throughout?
  4. What are the advantages of homemade goods over factory goods? Give examples.
  5. What are the advantages of factory goods over homemade goods? Give examples.
  6. When the factory takes over a home industry it creates leisure in the home. Is this always an advantage? How should the acquired leisure be used?

There is an important lesson in this illustration. The more completely and profitably machinery and nonhuman motive power can be applied to the making of goods used in the home, the more will home production be superseded by the factory.

Meanwhile, what were women doing while so many of their former activities were passing out of their hands as a result of changed methods of production and changed ways of living?

#### FACTORY EMPLOYMENT FOR WOMEN.

As household industries left the homes many women followed them and went to work in factories. The work itself was not necessarily new for women. It was spinning, knitting, and weaving, but they did these things by machinery and worked outside the home for a wage. The early mills and factories filled up with young girls who were the freest of all members of the family to seek employment there.

As factory production expanded, the number of women working outside their homes for wages grew also. The 1910 census lists 8,000,000 women who were thus employed. The striking thing about these 8,000,000 women is their youth. The same number of working men would be made up of the young, the old, and the middle-aged. But in many industries from one-third to one-half of the women are below twenty; a very small percentage is over twenty-five. Thus women have followed their work from the home to the factory only for a part of their lives. The period of life when most women work for wages is from the time of leaving school until marriage. In the very poor or very ignorant or very indifferent families, girls leave school for the factory as soon as the law permits.

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1. In the factories that you know about, what kinds of work are the women doing? What wages do they receive?
  2. Why do women in factories typically do the work that is least well paid?
  3. What are the laws of your State concerning compulsory school attendance? Of what advantage is it for a girl to stay in school instead of going to work at an early age? Of what concern is it to the State to have such laws?
  4. What are some of the hardships that girls have encountered in factory employment? Can these be remedied? If so, how?
  5. Of what interest is it to the State to have factories maintain good sanitary conditions?

All machine production can be very quickly learned even by the young and untrained. They can tend machines, paste on labels, fold paper boxes, dip candy, place covers on cans, but doing this gives them no training for higher kinds of work. Here is a partial explanation of the low average wage of working women.

Women have gone to work not in factories alone since their home occupations diminished. Great numbers of them work in department stores, offices, and the telephone exchanges. Most of these are new lines of work for both men and women, and have developed since 1870. It is "clean" work, and attractive for that reason. Certain lines, as the higher grades of clerical work, book-keeping, typewriting, and stenography, require special training.

The present war situation has increased the number of women in industry because the withdrawal of men to the army and navy makes a new scarcity of labor. Women are now employed in great numbers, in the European countries particularly, making munitions and equipment for the soldiers as well as carrying on some of the work formerly done by men in peaceful pursuits.

#### PRESENT WORK OF WOMEN WITHIN HOUSEHOLDS.

Finally, what is the work of women within the households at the present time? They have one important new function in return for the old one of "making" which they have given up. That is, they must "buy." Some one must provide the things for the

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1. Look into the United States Census volume on occupations and find in what other lines of work besides those mentioned women are found.

2. Is the entrance of women into department stores and offices an "effect of machine industry upon the work of women"? If so, why?

3. What influence should you expect the war to have upon women's work? Upon women's wages? Upon laws regulating the work of women?

4. Make a list of things which in your experience are usually bought by women.

5. What mistakes is an ignorant person apt to make in buying foods? Can we always tell when there are injurious ingredients in the food that is put on the market?

6. What mistakes are made in purchasing clothes, household utensils, etc.?

7. The Food Administration has distributed much information about saving. What have you seen of this information? What can you do to spread it?

family's use, once made at home, but now made in factories and offered for sale. This is the modern housewife's part in caring for the needs of her family. She must decide what to buy, hunt the goods up, make bargains as to price, and make the goods available for the family at the time they are needed.

It is by no means an easy matter to spend the family income when, as is usually the case, it is small as compared to the wants and needs of the household. If money is spent for one thing, the family must go without something else. The modern housewife ought to be as skilled in buying as her grandmother was in the arts of spinning and weaving. The welfare of the family is very closely bound up with her care and wisdom in spending money. She must know what her family's needs are. If she buys her children meat when they should have milk, or fancy ribbons when they should have warm clothing, they will suffer from her ignorance. Then she must know how to judge the quality of the things she buys. If there are tests to apply to shoddy or adulterated or impure goods, she should know them. On the whole, if the modern housewife works less with her hands than her grandmother, she should work as much with her brain, for it is no insignificant task that is hers, to plan the manner of living and carry on the expenditures for the family.

#### ONE WAY WOMEN MAY HELP TO WIN THE WAR.

This part of woman's work is of tremendous importance in connection with the war. It is the duty of our country to produce all it can of the necessities of life and to consume wisely, so that we may help our allies. Woman as the real director of consumption in the household has here the opportunity to contribute greatly toward victory over the enemy. The urgency of the matter at this time is the reason for a special effort on the part of our Federal Government to reach the women of the household with suggestions for wise utilization of food materials.

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LESSON B-12. IMPERSONALITY OF MODERN LIFE.<sup>1</sup>

Many times in our discussion we have seen that the methods people use in making things affect very much the ways in which these people live. The frontiersman, who made all the goods he consumed, lived an isolated, lonely life, almost entirely lacking in contact with other people of his kind. The colonial families, living in clusters along some waterway, also made, as a group, most of the things they used. All members of the little group came to know each other very intimately. Nowadays, the gathering of workers into large stores or factories (we call this "large-scale production"), the procuring of things we use through trade or exchange rather than making them all ourselves, and the massing of people in great cities result in a kind of life very different from that of former days.

## THE INTIMATE LIFE OF A SMALL TOWN.

Picture to yourself the life of a person in a small village. He knows and calls by name every man, woman, child, and dog he meets. He meets the same people day after day at church, in the store, at social gatherings, and at town elections, and learns all the ins and outs of their everyday life. Every event which occurs in the village is of interest to him, if not of real concern. If he is successful in business or if he has business reverses, the facts are quickly known to all his neighbors. Indeed, the inhabitants of small towns live in such personal contact with each other that the writers of stories which tell of gossips or busybodies frequently locate these persons in a village or small town. This is a recognition of the fact that in such communities the relations between neighbors are very intimate.

Follow the man as he moves from the village to a new home in the city. Perhaps he moves into a flat building in which eight or ten other families live. These families are strangers to him, and are likely to remain strangers. He does not meet them in church or in the shop where he works, or on the street. Everywhere he goes he sees new faces. Strangers jostle him on the cars and in stores; strangers manage the plant from which his water supply comes; strangers run the electric light plant which

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<sup>1</sup> This lesson was prepared by Leona Margaret Powell, department of political economy, University of Chicago. It shows the results of large-scale production and machine industry on the habits and modes of thought of people. Industry affects not merely material wealth, but the character of people as well.

furnishes his flat with light; strangers govern his city—strangers whom he may come to know by name but generally not by sight. He trusts the teaching of his children to strangers. He depends on strangers to take care of him at the hospital if he is sick. He is dependent in a hundred ways on people whom he never sees or perhaps sees but once or twice. The milkman who brings the milk to his flat may come and go a hundred times without so much as a single word of salutation.

ACQUAINTANCES INCREASE; INTIMATES DECREASE.

Suppose he works in a big store or factory. There will be at his side dozens or even hundreds of other workers, but he is not likely to become intimate with very many of them. If he goes to a lodge or a church, he meets there a group of people whom he sees in no other place. He comes in time to know slightly a hundred times as many people as he knew in his village life, but never to know any of them in the complete way in which he knew his village friends. We see that his relations with other people are more impersonal in character than his village relationships.

It is clear that the city is much more impersonal than the little village, but even the village of to-day is impersonal as compared with the village of a hundred years ago. In former days the people of the villages nearly always knew in a personal way the people who made the various things they used. Very frequently they were made right in the family circle. If they were not so made, the chances are that the villager would know from what neighbor's farm the wood or flax or lumber or leather came and would know everyone who worked these raw materials into finished goods.

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1. Does it make any difference to you that you do not know the clerks who wait on you in the big stores?

2. Is it safe to let strange policemen do all that is done to protect people's houses from robbers?

3. How can one depend on strange firemen to take any interest in keeping one's house from burning down?

4. Make a list of things in your home that have been made by people whom you know well; by people whom you have seen; by people whom you know by name.

5. Try to find out in what part of the country the furniture in your house was made and where the wood, leather, etc., came from to make it.

6. Some manufacturers put into their advertisements a personal element. Find examples.

7. Name the different associations you know the aim of which is to get people acquainted.



His friend, the carpenter, helped him make his furniture; his neighbor, the cobbler, made the shoes for the family; his cousin, the blacksmith, shaped much of the iron ware he used.

#### ANONYMOUS PRODUCTION.

In the village of to-day the situation is very different. What article of dress or food or household furniture now used by village people could be traced by them to the person who made it? A few local industries still survive. A few of the householders in the village get their butter directly from some farmer's wife who churns it, shapes it, and brings it to the customer's door. But in many cases the butter is bought in packages marked with the name of some distant dairy, or perhaps not marked at all. Perhaps the village carpenter comes in and puts up a shelf which he himself has stained and finished; but the brackets on which the shelf rests come from nobody knows where, and were taken through all the processes from mining the iron ore to the final shaping by the people whom the villager has never heard of and will never know. His flour comes from an unknown miller's hands; his shoes were made in a distant factory by unknown workers. In brief, many of the things he uses have not the "personal quality" which was so characteristic of things in earlier days.

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1. If you should go to work in a cotton factory, could you expect to know any of the people who would finally use the cloth you were helping to make?

2. Can you name any industry in which you would be more likely to know the users of your product, at least by name? Where you would know them by sight? Where you would meet them at other places than in the place of business?

3. How does the railroad widen the distance between producer and consumer? How does the telephone widen it? The telegraph? Ocean steamers? Ocean cables?

4. Do you think we could produce things for people we do not know and never see if there were no such thing as money?

5. If each family produced all the things it used would there be any use for money?

6. Suppose there were no such thing as money. Could you spend your time making paper boxes and expect to trade them with other people for your food and clothes and everything else you wanted?

7. Can you name any industry where production could not be called anonymous?

## THE MARKET AND ANONYMOUS PRODUCTION.

This modern way of meeting our wants is sometimes called the method of "anonymous production." We say a letter or a book is anonymous when we do not know who wrote it. So we can call production by unknown persons for unknown persons "anonymous production." Perhaps it is not strong enough to say that goods are made for unknown persons. The situation is still more impersonal. Goods are made for "a market" wherever that market can be found, and this is a very impersonal matter indeed.

## IMPERSONAL MONEY EXCHANGE.

In the very early days of trade, a producer who had one product was likely to barter it or trade it directly with some other person who had a different article. The two people met each other in person and very frequently carried on a long conversation in effecting the exchange. To-day we have money exchange. A producer makes things in large quantities and sells them for money to a large dealer whom we call a jobber. The jobber sells them to a wholesaler, the wholesaler to a retailer, and the retailer to the consumer. Since we have such excellent methods of communication and transportation, it frequently happens that the producer and the consumer are thousands of miles apart and have no bond of connection whatever, unless one calls the impersonal money used in the various transactions a bond of connection. It is not surprising under such circumstances that some producers become careless of the best interests of the consumers whom they do not know and will never see and care only for making as much money as possible as quickly as possible.

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1. Do the people who produce services instead of products produce anonymously? Is the lawyer an anonymous producer? The teacher? The opera singer? The bootblack? The physician?

2. Why do we produce "what will sell" instead of "what people need"? Are these two things always the same?

3. Could a tailor depend entirely on personal recommendations from his customers for his trade?

4. Can you name an industry which gets all its trade in this way?

5. What amount of trade do you think is directed to concerns by their advertisements?

6. Why can you call advertising an impersonal way of getting trade?

7. What is the difference between the wholesaler's methods of getting trade and the retailer's?

8. Give examples of loose practices which grow up because of the impersonal character of modern industry.

## THE IMPERSONAL CORPORATION.

As we know, things are done now on a large scale. We have big factories, big warehouses, big stores. It takes a great deal of money to run such big businesses—more money than most individuals have or, indeed, more than can be secured by several individuals uniting and forming what is called a partnership. Under these circumstances, a device called the “corporation” has come into being. This device makes it possible to get large sums of money together because it is an arrangement by which a great number of people may buy one or more “shares of stock,” which gives them a part ownership in the concern. This tends to make even the ownership of business impersonal. When there was but one owner in a concern it was “his business” in a very real and personal sense. He made the plans, bought the raw material, directed the processes, and sold the goods. With the corporation, matters are very different. The owners are very numerous; they may not even be acquainted with one another; they do not “run the business” in any personal way. They elect a board of directors. The board of directors appoints a manager. The final result is that in some concerns there are a thousand or more owners scattered over several different countries who know little or nothing about the business and some of them care little or nothing about it. They are interested mainly in the rate of dividends they receive.

## IMPERSONAL RELATIONS OF THE WORKER.

Our modern large-scale businesses make the relationship between the owner and the worker very impersonal. In the days of small industry, the master and the workmen were friends in a very real sense of the word. Indeed, the worker frequently lived in the home of the master and received trade instruction from him.

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1. Why do people buy stock issued by corporations?
  2. Could the holders of shares of stock in the Bethlehem Steel Co. be personally acquainted with the workers in those mills if they cared to?
  3. Do you know of any store or factory where the workers do not know the owner even by sight? Does this happen only when there are many owners? Could this happen where there is one owner who manages the business himself?
  4. What sums of money are needed to build a railroad? Is there any great railroad owned by one man?
  5. How do people find out about the way in which a corporation does its business if they own stock?

When John Goffe, of Cornwall, England, was apprenticed to John Gibbs in 1459 to learn the "craft of fishing," it was part of the written contract that "John Gibbs and Agnes, his wife, should teach, train, and inform him in the best way they know, chastising him duly and finding for him food, clothing, linen and woolen, and shoes, sufficiently as befits such an apprentice to be found." Under the laws of England this intimate, personal relationship between master and apprentice lasted seven years.

#### BUSINESS ORGANIZATION IS IMPERSONAL.

Nothing like this is possible in the big businesses of to-day. There are few, if any, personal contacts between employers and employees. In the work place a whole system of organization—managers, heads of departments, foremen, subforemen—has come between the employer and the men. Impersonality also rules outside the work place. How strange it would sound to hear of a worker making a social call upon his employer or going to a ball game with him! It would sound even more strange to hear of the worker living with his employer, except in the case of farm work.

All this does not mean that employers give no thought at all to the welfare of their workers. Many do, but their interest must be expressed in a form which reaches a group rather than an individual. They organize welfare work, provide some kind of a club, set aside in the shop rest rooms for the women employed, and put in motion various other enterprises for improving the conditions of life of the workers. But large-scale industry forces this to be done largely on a group or impersonal basis. Where several thousand men are employed in a single plant and where the owners of this plant are members of a corporation, it is simply impossible for personal relationship to spring up.

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1. Do modern employers take apprentices? If so, do they provide food and clothing for them?
  2. Why do employers need foremen and subforemen?
  3. How could you call welfare work for groups of employees impersonal?
  4. What welfare work do you know of in factories? In towns?
  5. Some factories take a hand in the housing of workmen. Can you find examples?
  6. Does welfare work pay the owner in a financial way?
  7. What is meant by impersonal standards of work?
  8. "Machines do work once done by human beings." Do they do it in the same way?

## THE IMPERSONAL MACHINE.

Even the machines with which the men make goods to-day increase the impersonality characteristic of modern life. There are few things more impersonal than a machine when it gets into operation. It works according to physical laws and not according to the mood of its attendant.

If the worker is tired and has difficulty in keeping up with the machine, the steel and iron with which he has to deal have no sympathy for this feeling. If a man puts his hand into a die press, the machinery goes on working exactly as it would if he had put in the proper material to be stamped. An engine will not get off its track to spare a man who has been caught in its way. The law of gravitation, the pile driver, and the steam shovel at work are no respecters of person. Those who work with machines must understand this fact, for upon a clear understanding of it rests not only their efficiency as workers, but also their safety in life and limb. The machine works in terms of cause and effect. It has no personal likes or dislikes.

## NEW VARIETIES OF WRONGDOING.

It is interesting to see how impersonality in our relationships to-day makes it easy for many people to do wrong to others without having it trouble their consciences. If the village carpenter knowingly put a piece of poor wood in a child's swing and the swing broke and the child was hurt, the carpenter could hardly help feeling guilty. But suppose that an ironworker turns out a poor piece of metal which is later made into a defective wheel, which one day bursts and kills five other workers in a shop 3,000 miles away. Will the responsible person have a feeling of responsibility? The chances are that he will never even hear of the accident. Or, take the case of the owners (stockholders) of a corporation who received large dividends because the corporation was doing something harmful to the public. Will these owners feel guilty? They may know nothing whatever concerning the acts of the corporation.

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1. What is meant by the "impersonality of the laws of nature?"
  2. Did the canners who put preservative acids in the foods they were canning intend to injure people who used the food? Why did they use the acid if it was injurious?
  3. Do you see any advantages arising out of impersonal relations such as those described in city life? Those between producer and consumer? Those between employer and workers?

## THE NEED OF NEW STANDARDS OF CONDUCT.

The point is that we do not to-day deal as directly and as simply with persons as formerly. Goods are made for that vague and impersonal thing which we call the "market." We do not see personally the consequences of many of our improper acts. Indeed, unless we understand a good deal about how society is put together, we are not likely to realize that there are evil consequences. It is this situation that some persons have in mind when they say that "we must develop a new code of ethics or morals because the old, personal codes no longer meet the needs."

## MANY DEVICES USED TO COPE WITH IMPERSONALITY.

But we can not wait for a new code of ethics to develop. Some of the evils of impersonal relationships are so serious that we meet them by using law and government. The time may come when we can put our trust in the virtue of meat packers, but at present we rely on Government inspectors of meat. We have at present more faith in our pure-food laws than we have in the piety of the men who run our canneries. So also the Government has stepped into the gap caused by the impersonal character of machine industry and provides for factory inspectors and for accident insurance and other payments to injured workers. The workers themselves have developed a group or impersonal device called the "trade-union" to take care of some of their problems. Some one has called the trade-union an impersonal means of meeting the difficulties of an impersonal situation.

The managers also have problems arising from the impersonality of modern business. For example, workers often do not have a personal interest in their tasks and thus turn out a small or a poor product. Systems of inspection, accounting, and latterly "scientific management" are some of the devices used by managers to meet the situation. It is a common saying that labor has largely lost its old "personal" incentives and that the "impersonal wage" does not adequately fill the gap.

It is evident that there are many new and puzzling problems connected with the ways that we live together in our modern industry and modern life and that much study will have to be given to their solution. This lesson should not leave with us the feeling that all the old personal ties have been broken. Far from it. There are, however, many instances where they have been broken or at least weakened, and here we must find something else to take their place.



## **Chapter IV.**

### **NATIONAL CONTROL AND FOOD CONSERVATION.**

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National unity is the theme of this chapter. Executive departments and bureaus are devices through which the people of the Nation unite in formal and legal ways to bring about certain results for the common good.

Those governmental agencies can do only what the people, through proper representatives, instruct them to do. Our Government, therefore, is cooperative and democratic, and not in any sense paternal and autocratic like the governments of some of the European nations. That does not mean that any individual in our country would have the right to assume authority merely because he has a voice in the government, for the ways in which the people cooperate in government are very definitely fixed.

When a man is chosen as a public officer and is instructed in the proper manner to do certain things which the people want done, he has all the power that is necessary to do those things. He has no power at all, however, to perform any governmental act except the things that he was chosen to do, and he can do them only during the time for which he was chosen.

The President is elected to perform a number of very responsible duties which were determined long ago. He is clothed with ample authority, but at the end of his term of four years he becomes a private citizen again, with no more authority than any other citizen. The President selects 10 assistants who are members of his "Cabinet," and each one becomes the head of one of the 10 great departments into which the executive branch of the Government is divided. Each department is held responsible for its own special work, for which it was created by the Congress.

This chapter contains an illustration of the way in which these departments are organized and how their work is done. Other agencies of the Government are also described, and the reasons for their establishment are explained.

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### **LESSON B-13. THE DEPARTMENT OF THE INTERIOR.**

Prepared from information furnished by the Department of the Interior.

A great American scientist once wrote an essay describing a plan which he thought would do away with wars. He recommends in this essay that the Nation be organized as an army to attack nature and make her yield more abundantly all that man needs for his comfort and happiness. If men would join in attacking nature, they would stop fighting each other. If the whole Nation were made into an army, it would be easy to distribute the disagreeable tasks. In the army when men are ordered to dig ditches, they do it without any question. The world has to have ditches dug in times of peace. Why not divide up all the hard and dis-

agreeable work as the army does? If the nations were devoted in this way to a great attack on the problems of getting good things from nature, we should have—so our scientist said—a substitute for war.

#### THE NATION AT WORK.

The plan is in reality a long step further in a direction in which our country has already gone. People do not always recognize that a nation is a group of people working together for the necessities and comforts of life. When a nation has to defend itself by war against an enemy, then it is easy to see that the whole country is working for a single purpose through its army and navy. In times of peace when one man is cultivating a farm, another preaching sermons, another running a street car, it is much more difficult to see the common purpose which underlies the efforts of all the people.

It is easier to see the unity of national life when one goes to Washington and learns of the way in which the National Government is trying to cultivate all the resources of the country. There is a department of the Government, known as the Department of Agriculture, which deals with all the agricultural problems of the country. There is another department, known as the Department of Commerce, which finds out how many people there are in the United States, supervises navigation, sets up standards of weights and measures, determines standards of lighting and electric power, and so on. There is another department, known as the Department of Labor, which deals with labor problems. This has bureaus which study and control immigration and naturaliza-

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1. The scientist referred to in the text is William James. Look up his essay and point out such reasons as you can for or against his plan.

2. Why is discipline more rigid in the Army than in ordinary life? Think of other times when discipline is absolute. Such as when a fire company is fighting a fire or when a captain on a ship gives orders. Why are these cases like the ones which come up in army life?

3. Do you favor military methods in keeping order in a school?

4. Show how each person mentioned in the text—the farmer, the preacher, and the street car conductor—is cooperating in the work of the Nation.

5. Get a list of the departments of the Federal Government and find out what are their chief lines of activity.

6. Find out something which the National Government does in your city or county and explain why it is necessary for the National Government to do this particular task.

tion, and others which collect information about working people and deal with problems related to the welfare of children.

A review of all these departments would soon convince one that there is a great national working army which is fairly well trained to make vigorous attacks on nature.

#### THE DEPARTMENT OF THE INTERIOR.

The various departments mentioned all grew out of the work of the Department of the Interior, which still has in charge many of the problems of national development. This department is of special interest to readers of these lessons, because one branch of that department, namely, the Bureau of Education, is responsible in part for the preparation of these leaflets.

The word "interior" as it appears in the name of this department calls attention to the fact that some of the departments of the Government deal with matters that are exterior or outside the country. The Department of State prepares our treaties and cares for our international relations. The Departments of War and Navy are clearly concerned with matters outside the Nation. There are other departments which share in promoting the internal development of the country, namely, the Post Office, the Treasury Department, and the Department of Justice. The Department of the Interior does not have one single type of work to do, as does each of these last-mentioned departments, but is made up of a number of divisions or bureaus, the varied duties of which may be briefly described.

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1. The heads of a number of the Federal departments are called Secretaries. Why? Who appoints them?
  2. Look up some of the publications of the various departments and find out what kinds of subjects are treated in these reports.
  3. Can the Department of State conclude a treaty with a foreign Government?
  4. From time to time new Federal departments are created and the powers of existing departments are changed. How is this done?
  5. In European countries there is another method of appointing heads of departments. Find out about the method of England and France.
  6. There is a great deal written these days about the German chancellor and the fact that he is not responsible to the Reichstag. What does responsibility in this case mean?
  7. Could Congress dismiss one of our Cabinet officers?
  8. Are the members of the President's Cabinet responsible to Congress?
  9. There are certain rules of appointment within our departments known as civil-service rules. Who makes and administers them?

## THE LAND OFFICE.

The Land Office has charge of the public domain; that is, of the land which is not owned by individuals. Whenever a new territory is opened up, the land belongs to the Government and individuals can get titles only when the Government gives them titles. This is true of mineral lands as well as agricultural lands. The Land Office has charge of all land which belongs to the Government, or is part of the "public domain" as it is called. In 1915 there were a little over 200,000,000 acres in the United States and 400,000,000 acres in the Territory of Alaska still belonging to the public domain. Some of it is oil and coal land which it has been suggested that the Government keep and lease. Much of it is desert land which will be very productive when irrigated. It is the policy of the Government to allow settlers to "take up" its land. If they build residences and cultivate the soil under the conditions fixed by the law, they receive titles to the land and it becomes their property. Each settler can have only a limited number of acres. Where the soil is fertile, the limit is 160 acres. In desert areas, the settler is sometimes allowed as much as 640 acres for the support of his family.

## INDIAN AFFAIRS AND PENSIONS.

The Office of Indian Affairs is very closely related to the Land Office. The land originally belonged to the Indians and, as settlers have pushed into new territories it has become the duty of the Office of Indian Affairs to provide for the Indians and to attend to the careful adjustments of their rights.

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1. Is there any part of the public domain near your home?
  2. In what parts of the country are the largest sections of the public domain? Explain why.
  3. How can one find out when land is to be opened to homesteaders?
  4. How does one secure a homestead?
  5. What are the conditions under which a title may be secured?
  6. Can you describe any occasions when the Government has opened up great tracts?
  7. What is the difference between a Territory and a State in the form of government?
  8. What is the history of Alaska? Why is it not make into a State?
  9. What does it mean when the Government "withdraws" land?
  10. What are the reasons for the decision to hold and lease lands rather than give them to settlers?
  11. What is desert land? Where are the greatest deserts in the United States? Explain their existence.

The Bureau of Pensions is also related to the public domain. It has always been the custom of nations after war to give soldiers land as a reward for their services. After every war which this country has waged, great quantities of land have been given to soldiers who have settled there and cultivated the land and built homes.

Not only have our soldiers had land, but the Nation has been generous in payments to soldiers and their wives, until the pension bill of the Nation is one of its great expenditures. The administration of the pension fund is the duty of the Bureau of Pensions.

Omitting for the moment the Patent Office and the Bureau of Education, we have no difficulty in understanding the other divisions of the department as related to the development of the country.

#### SURVEYS, RECLAMATIONS, MINES, AND PARKS.

Through the Geological Survey the Nation is made aware of its resources. This bureau prepares reports and maps showing the mineral wealth and the forests of the country, its rivers and mountains. Anyone can get these excellent maps and reports from the Superintendent of Public Documents for a small payment which covers the cost of printing.

The Reclamation Service is in charge of the irrigation projects which are making fertile regions out of areas which were formerly unproductive because of lack of rain.

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1. Look up in the histories of the United States what is said about land given to soldiers. What parts of the country were settled largely in this way.

2. Ask some old soldier about the pension system and get him to show you what an honorable discharge is and also some of the pension papers.

3. In the present war Congress has adopted a different plan—one of insurance. Find out about it and discuss its advantages.

4. The matter of pensions has been carried much further in some countries than it is in the United States. Would it be wise for our country to establish old-age pensions for all kinds of people?

5. Why should a survey of the land and natural resources of the country be called a "Geological Survey"?

6. The officers of the Geological Survey are at this time very largely taken over by the Army. Why does the Army need geologists?

7. In making maps for the war entirely new features of the landscape are asked for by the aviators; for example, they want single trees in open spaces mapped. What aspects of landscapes do you think of importance to an army?

The Bureau of Mines has charge of the mineral interests of the Nation, and the National Park Service superintends those parts of the public domain which have been set aside as the Nation's playgrounds. This service publishes a series of leaflets which tell the traveler how to reach the parks and the rules under which he may ride or tramp and camp there.

#### HUMAN RESOURCES OF THE NATION.

The Patent Office and the Bureau of Education have to do with the human resources of the Nation. Anyone who can add to the welfare of the Nation by devising a machine which will use natural power to better advantage, or will manufacture raw products into usable goods, finds encouragement in the protection given him by a Government patent.

The Bureau of Education represents the National Government in so far as it deals with schools. In this country the control of schools is for the most part in the hands of the State and the school district. The National Government helps local authorities by collecting information from the schools of all the States and publishing reports on all kinds of school matters. It also gives information to anyone who will write for it. In addition, the bureau has charge of schools and certain other interests in Alaska and allots the funds given to the land-grant colleges.

#### CONSERVATION OF WATER POWER.

Each of these divisions of the department might be followed in detail, but we must limit the present lesson to one example. Secretary Lane has described the importance of developing the water power of the country as follows: "When Benjamin Franklin

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1. Look up some irrigation projects carried on by the Government.
  2. The Bureau of Mines has done a great deal of work in the war on protective masks for gases. Why should that particular service be appropriate for this bureau to render?
  3. What are some of the largest national parks?
  4. Why is it a matter of national importance that these parks be set aside from the public domain?
  5. Why are parks important in cities?
  6. How does a patent encourage people to contribute to the good of the Nation?
  7. Get a copy of the Patent Office report and describe what you find.
  8. With regard to your own school, who is the officer in charge of the finances?
  9. Find out about teachers' licenses and about the course of study.



caught the lightning on the tail of his kite, he did a lot of strange things for this world, of which we are only beginning to learn. Among these are the uses to which flowing water may be put. The old-fashioned water wheel, which was the motive power of our early industries, is now converted into a turbine which generates electricity, and this has as great a variety of uses as the muscles of a man's arm or a horse's shoulder. Among the other strange things done by Benjamin Franklin was to give an added and peculiar value to the ledges of granite which confine our western streams and turn them into dam sites, useful for purposes of power generation. How many of these there are on public land not yet disposed of no one knows, but we have several hundred under withdrawal, which should be freed from withdrawal and turned into use just as quickly as possible; for, as the muscle of man or horse can raise a few barrels of water from the well to supply stock or irrigate the garden patch, so can the power of the stream, turned into electricity, be used to raise millions of barrels of water to irrigate alfalfa farms or orchards. And this is now one of the most common uses of electric power in the West, and, in fact, in some of the Eastern States, where irrigation is found of value. The waters that flow down our streams are only a small portion of the rain and snow which fall. There are streams that follow their courses underground just as clearly marked and as valuable, if once discovered, as the streams above ground. And to tap these is a part of making America. Cheap gasoline is doing it in some places; cheap coal in a very few; but cheaper electricity is doing it in a large way.

“Then, too, there is that mystifying miracle of drawing nitrogen from the air for chemical use, which can be done only with

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1. Who owns a stream and the power which it can give?
  2. Why is a dam necessary in order to get power from a stream?
  3. Why is electrical power so important in the development of water power?
  4. Why does Secretary Lane emphasize the importance of making power and other resources useful? What are the reasons why use has come about so slowly?
  5. Can you think of other ways than Government control by which the community encourages the wise use of resources?
  6. The war has made us more fully aware than ever before of the importance of wise and full use of resources. Give examples.
  7. What relation has conservation to the number of people a country can support?
  8. How does war interfere with a country's ability to support its people?

great power, but is being done in Germany, Norway, Sweden, France, Switzerland, and elsewhere; by which an inexhaustible substitute for the almost exhausted nitrates of Chile has been found. This is already a great industry in Europe, and will by necessity become greater in the United States than elsewhere, because of our size and need and opportunity. To increase the yield of our farms and to give us an independent and adequate supply of nitrogen for the explosives used in war, we must set water wheels at work that will fix nitrogen in lime. And there are still more intimate uses for this power—in places in Montana it is so cheap that it operates the churn, the sewing machine, and the vacuum cleaner, and supplies light to the house and fuel to the kitchen range. Indeed for the possible uses of electricity there is no measure."

#### CONSERVATION AS PROPER USE.

The reason why the Government must take a hand in the development of all these resources is clear the moment one thinks of the matter. It is of vital interest to the Nation that every resource shall make life richer and better. The Nation therefore sets its watch upon that which it has and provides in every case for the best use of its resources. In the Land Office, in patents, in education, and in mines, there is the one motive of development.

This motive is discussed by Secretary Lane as follows: "But in all our giving we have been guided by a purpose—the land that we gave was to be converted from wilderness into homes, or from rock into metal. We gave to the States and to the railroads, with a reservation of minerals. We gave to the homesteader, with a condition—the land was to be used. We gave our swamp lands, but to be reclaimed. We found our coal lands going as farms, and we put a price upon them. We saw our forests being swept clean or monopolized, and we held them out from the mass. Use! Use by as many as possible! The superior use! These were the things we wished and these gave form to our legislation."

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LESSON B-14. THE UNITED STATES PUBLIC HEALTH SERVICE.<sup>1</sup>

In September, when the men for the new National Army were starting for the training camps, a report was received at Washington that 100 men were about to go to a cantonment from a city where a great many people were sick with typhoid fever. Immediately the Federal Government sent to that city one of the laboratory cars which it owns and which it uses in studying and dealing with epidemics in any part of the country. This laboratory car is a fully equipped medical laboratory. It is manned by a group of sanitary experts and their assistants, who can go into any community where there is an epidemic and can study all the sources of food and water from which the disease might come. They can make examinations by the very best and latest scientific methods, because the laboratory on wheels is equipped to do this kind of work. The officers and men in charge of the laboratory are selected for this special service.

## PREVENTING AN EPIDEMIC.

In the city just mentioned it was found that the typhoid fever germs came from a water reservoir. Immediate steps were taken to purify the water supply, and the men who had been drafted and were about to go to the cantonment were kept away from the camp until there was no danger of their carrying the disease. Not only was the cantonment saved from the disease, but through the efforts of the Federal Health Service the city itself was helped. The aid of the National Government averted a serious epidemic.

## OTHER HEALTH SERVICES.

The work of almost every branch of the Government has something to do with the health of the people. The Army and the Navy both have a corps of physicians who not only treat the soldiers and the sailors when they are sick but also keep them from getting sick. The Department of Agriculture deals with the health of human beings by inspecting meat and by studying food supplies. There are pure-food laws which do much to prevent the selling of impure foods to people who can not discover the im-

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<sup>1</sup> This lesson was prepared by John W. Trask, Assistant Surgeon General, United States Public Health Service. It describes one of the branches of the National Government which is concerned with human beings rather than with production and conservation of material things. It is of the highest importance that people be well. There is no more important form of conservation than the conservation of human life.

purities for themselves. There are other branches of the Government also whose work has a bearing on health.

#### WHY THE TREASURY DEPARTMENT DEALS WITH HEALTH.

There is one part of the Government, however, which does nothing but devote itself to the preservation of health and the prevention of disease. This is the United States Public Health Service.

The United States Public Health Service is a part of the Treasury Department. We are used to thinking of the Treasury Department as having to do only with coins and paper money and with the banks of the country. Let us see by looking into the history of the matter how a branch of the Treasury Department came to have charge of health in this special way.

In 1798, in the early days of our Republic, when most of our commerce and transportation depended upon our merchant marine, Congress recognized that sailors on merchant ships seldom had proper medical care when they were sick on board ship, and if put ashore they were away from home and dependent on charity. As a result, a service was established to give medical and surgical care and treatment to our sailors.

#### THE GROWTH OF THE SERVICE.

Hospitals and dispensaries were set up in all the more important ports along the Atlantic seaboard and the Gulf of Mexico. The Treasury Department was in charge at that time, as it is to-day of the collection of customs on imports, and all incoming ships were under the supervision of the collectors of customs of this department. Therefore hospitals and dispensaries for the care of sailors were placed under the direction of the Treasury

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1. Sanitary experts are not doctors in the ordinary sense, but are experts dealing with sanitary conditions of cities and larger districts. Go to the health officer of your city and find out from his reports what this means.

2. Why should one examine the water and other supplies in case of an epidemic?

3. How are water reservoirs treated in order to purify the water?

4. What are the conditions that produce impure water supplies?

5. Why should the men from the city be kept away from camp? How long were they to be kept away?

6. It is said that in this war very few men die of disease, while in the Civil War more died of disease than of wounds. What is the difference between our times and 1864 in this respect?

Department. Later, as the country grew, hospitals were established in the ports of the Great Lakes and on the large rivers, and that part of the Treasury Department which carried on this medical work was called the "Marine Hospital Service."

When serious epidemics occurred, and there was need for some one to take charge of stamping them out, the value of the Marine Hospital Service and its trained medical men was recognized. It was given charge of the control of epidemics and the prevention of the spread of disease throughout the country, and its name was changed to the "Public Health and Marine Hospital Service." As years went by, Congress gave it more and more public health work to do, and the name was finally changed in 1912 to the "Public Health Service." It is the duty of this service to work with State and local health officers and to do whatever may be necessary in dealing with health problems too large for the local authorities.

From the earliest colonial days there has been a strong tendency in America for cities, towns, and counties to govern themselves. So deeply rooted is the habit of local government and so well is this habit protected by laws that many State governments to-day undertake very little in the way of control of health conditions. Often they have done no more than make health requirements for the city, town, or county government to enforce. For the most part the State health departments merely help out the city and county health departments in times of emergency. The result has been that the local government has taken care of everything that it could, dealing with most ordinary matters of public health and calling on the State government for help in cases too big for it to handle alone. Where contagious diseases or unhealthful conditions have affected more than one State the Fed-

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1. The Department of Agriculture attends to the health of animals and in some ways to the health of men. Find some examples.
  2. What are customs?
  3. Look in the general histories and find out about the great plagues which used to spread through Europe and Asia.
  4. Why were these plagues more common in earlier days than now?
  5. In early days, when sailors took long sailing voyages, the food was such that they were very likely to have diseases that have now practically disappeared. Look in the encyclopedia and find out about scurvy.
  6. One of the great discoveries of modern times is a whole series of disinfectants. Find out about some of them.
  7. What does it mean to say that we can make a wound septic?

eral Health Service has taken charge of the situation, usually with the help of the State and city authorities. The Federal Health Service in this way represents the interests of the whole Nation. Its work shows how fully we have become aware of the fact that health is a national matter. No individual can neglect his health without affecting the lives of all who are related to him in the community and the Nation.

#### FIGHTING THE PLAGUE.

An interesting example of the need of a Federal Health Service was shown at the time of the discovery of the bubonic plague in California in 1900. At that time it was known that the plague was carried by rats and other rodents. Men took the disease from the fleas which infest the rats. The local board of health was not able to deal with the emergency. This is the disease that was once known as the "Black death." In various ways, by ships and by freight trains, the rats might be carried to adjoining and even to distant States, carrying the disease with them. To keep it from spreading to the entire country the Federal Government sent officers of the Public Health Service to take charge of the situation and to work with the local health authorities and those of the State of California to stamp out the disease.

#### YELLOW FEVER AND OTHER CONTAGIOUS DISEASES.

In 1905 yellow fever broke out in New Orleans. The city health department was not prepared to handle a serious situation of this kind and had to ask the Federal Health Service for help. The presence of yellow fever in New Orleans was a matter of the greatest concern to the other cities and States of the country. The disease might spread to all the Southern States, where the

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1. Find out about the health authorities in your town. What are their duties?
  2. When there is scarlet fever in a home why is a card put on the door?
  3. Some people do not like to have their houses placarded. Are they right?
  4. What happens in a school when an epidemic breaks out?
  5. In what ways does your school give special attention to matters of health?
  6. What part does recreation play in preserving the health of a community?
  7. Is an ordinary cold contagious?
  8. Why should the National Government not be called on to take care of all matters of health in a community?



mosquito which carries the disease is found. With the help of the Federal Health Service the spread of yellow fever was stopped.

In the same way as in the two cases described the country makes use of this service whenever there is a serious epidemic. If there is an unusual outbreak of diphtheria or typhoid fever or infantile paralysis which gets beyond the control of the local authorities, a request is made of the Federal Health Service, which sends its experts to take charge of the situation.

#### DESTROYING MALARIA CARRIERS.

If there is malaria in a locality and the people wish to get rid of it, they usually ask the Federal Health Service to investigate and show them the best and cheapest way to stamp out the disease. This is generally done by draining the swamps and accumulations of water in which the anopheline mosquitoes, which carry the disease, can breed. Bodies of water which can not be drained have kerosene oil sprayed on them to kill the larvæ of the mosquitoes.

#### ADVICE FOR CITY DEPARTMENTS.

If a city wants the best advice as to whether it has a health department suited to its needs, it may ask the Public Health Service to send officers to make a study of the health department and point out the changes that should be made.

#### INTERNATIONAL QUARANTINE.

Even in colonial days some effort was made at the various Atlantic ports to keep such dangerous diseases as cholera, plague, and yellow fever from being brought in from other countries.

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1. What are lines of connection that would bring the rest of the country into contact with California?
  2. Where did the plague come from?
  3. What are the conditions that make certain localities in the Orient a menace to us?
  4. Can you find out about any steps taken in this country to improve conditions in the Orient?
  5. Is American work in other countries justified in any measure by the advantage which we gain from this work?
  6. Why did yellow fever threaten us from the Southern States?
  7. What is the relation of climate to disease?
  8. What relation have these facts had to the migrations of the white race?

However, in 1877 yellow fever got into the country and there was a widespread epidemic. Following this, in the next year, Congress passed a quarantine law, the purpose of which was to prevent the introduction of these dangerous diseases from foreign countries.

In 1892 there was an outbreak of cholera in Europe. It seemed that the disease would certainly be brought to the United States by the passengers or crews of ships. In the next year Congress passed another law for the purpose of keeping out dangerous diseases. From time to time other laws having the same purpose have been enacted. The Public Health Service is responsible for the enforcing of most of these laws. By inspecting and, when necessary, disinfecting vessels on their arrival from foreign countries and by medical inspection of immigrants and crews, it prevents the introduction of dangerous diseases into this country. Inspection of immigrants is also carried on along the land borders of the United States, that is, along the Canadian and Mexican borders. To prevent disease being brought in by the great tide of immigration always flowing to our shores from every region of the world has become one of the great health problems of the country. By the examination of immigrants at the principal ports of Europe and Asia as they are ready to sail for the United States and by inspection also at the ports in the United States at which they arrive, the Public Health Service keeps out the physically unfit and those affected with dangerous, contagious, and loathsome diseases.

#### INTERSTATE QUARANTINE.

The work of the Public Health Service includes also the prevention of the spread of communicable diseases from one State

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1. How do mosquitoes carry disease?
2. What is the teaching of modern science about the fly as a carrier of infection?
3. What are the methods of exterminating the fly?
4. In the case both of the mosquito and of the fly, methods of extermination try to get at the larvæ. What are the larvæ? How do they live?
5. Note that Congress passes laws regarding health regulations. Find out about some of the local health ordinances and about some of the national laws.
6. "Laws are necessary in order to protect us against our own ignorance." Show how this is illustrated by health laws.
7. Who pays for all the health offices and their activity? Is it a justifiable expense?

to another of our own country. While each State is responsible in a measure for the control of disease within its borders, it is the duty of the Federal Government to prevent the spread of disease from State to State and to protect the country as a whole from dangerous disease conditions which may develop in any one State. With our greater knowledge of the causes of diseases and the means by which they are spread, we know that disease is no respecter of State borders or other civil boundaries. The cases of communicable disease in one State are a menace to neighboring States and to the country as a whole, for, with the rapid transportation and the increased travel brought about by railroads and steamboats, Chicago and St. Louis are to-day in closer association with New York City than Philadelphia was 100 years ago. Diseases are carried by people, and people travel by trains.

#### HEALTH AND INDUSTRIAL CONDITIONS.

There are other diseases than the communicable diseases in which the Public Health Service is interested. We have come to know that many diseases affect people because of the way they choose to live or because of the way they have to work and play. The conditions in the home, in the school, and in the workshop and office all affect life and health.

Not only have we learned what diseases are and how they may be controlled, but we realize more clearly than ever before that all the members of a community depend very much on each other. The man who is sick is unable to take his part in the work of the community. He may have become sick because of the mode of life which was imposed on him in the shop or factory in which he worked, or by the food which he bought at a public market, or by drinking the water from the public water supply furnished by the city, or by drinking milk produced on a farm where there was

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1. What interstate relations other than matters of health are in the hands of the Federal departments?

2. Explain the statement about the association between cities now and 100 years ago.

3. "The railroad is a great menace to public health, therefore no one should ride on the railroad." How can you answer this argument?

4. There are certain diseases connected with certain occupations. Find out about some of them. What is the duty of the city or State in these matters?

5. Certain great corporations have special health departments for the benefit of their employees. Does this pay?

a case of diphtheria or typhoid fever. All these cases show that health is a matter of community interest. If a man can not take care of himself, he must be helped by the community as a whole. Then conditions can be established which will be wholesome and make it possible for everyone to do his work and live in health. When this lesson is more generally learned by communities, the demand for public-health supervision will be even greater than it is now.

#### THE WAR AND THE TEACHING OF HEALTH.

The war will certainly impress the Nation with this lesson. The education in health matters of the people near the cantonments where the National Army is being trained is one national gain resulting from the war.

When the United States declared war on Germany and began to mobilize its Army, the Public Health Service made investigations of the sanitary conditions about the camps and cantonments. Where there was any need for special control of the sanitary and disease conditions in these areas, in order to protect the health of the troops the United States Public Health Service took charge. In cooperation with the State and local authorities it established model health administration around the cantonments. In some cases house-to-house canvass was made of the homes, giving suggestions as to changes which ought to be made. In this way a knowledge of what is necessary to health is being spread by the Health Service. Indeed, education in health matters is one of its chief duties.

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LESSON B-15. PRICE CONTROL OF WHEAT.<sup>1</sup>

In ordinary times of peace the price for which an article sells depends upon how much there is of it and how much of it people want. Under ordinary circumstances no one pays for air, since it is so abundant. On the other hand, one has to pay for food. In our cities householders have to pay for apples. In years when there is a large crop the price is low. In years of "short crop" the price is high.

Price is a kind of language used by customers and producers. If a man wants something very much, he is willing to pay the price even if it is high. If a producer is very eager to sell, he advertises his goods at a low price. Consumers use this language also to tell producers what to make and bring to market. When many people want a certain kind of apple, the price of that variety goes up and fruit growers, seeing an opportunity to make large profits, plant the trees which yield that variety. Of course, this adjustment of the supply to the desires of consumers is not limited to apples. It is equally true of almost all the articles we use.

## PRICES IN WAR TIME.

The world war in which we are now engaged has had very great effects upon prices. Workers who were formerly producing the things we use every day have been called into the armies of the various countries. This has caused ordinary goods to be produced in smaller quantities, and their prices have risen. Then, too, the demand is great because war uses up goods rapidly. Furthermore, there are so many uncertainties in war that neither producers nor consumers know just what to expect, in even the very near future. The producers hesitate to produce in large quantities for fear they may not be able to sell at good prices, and the people who buy are restless and nervous and do not use the price language very intelligently. They are likely to buy for hoarding, to buy on the basis of false rumors, and in various ways to make the price language seem very different from what it is in times of peace.

Industry was much disturbed by this upheaval in prices, and so were the finances of families who had to pay the unusual and uncertain prices. The appeal began to be heard for Government regulation of prices.

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<sup>1</sup> This lesson was prepared by the Public Information Division of the United States Food Administration. It describes one of the activities of the Food Administration. At the same time it gives in a concrete way an explanation of the conditions which lie back of the fixing of prices of commodities.

## PRICE REGULATION.

The regulation of prices is, however, no simple matter, and no Government ever undertakes the task without a great deal of study in order to be sure that its steps are wise and just. We can see how complicated the matter is from a study of what has happened during the past few months since our Government began to regulate the price of wheat and bread.

## THE WHEAT MARKET OF THE WORLD.

For five years before the war began in Europe the average price of wheat had been about 87 cents per bushel. This price was fixed by the competition between the countries of the world. Some countries, such as England, France, Norway, and Sweden, have to import wheat every year, because they use more than their farmers think it worth while to raise at the usual price of wheat. These countries, which are called "deficit" wheat countries, get wheat from the "surplus" countries, of which the more important are Russia, Argentina, Canada, Australia, and the United States.

## THE WAR DISRUPTS NORMAL GRAIN CONDITIONS.

With the beginning of war in Europe in 1914 the usual trading operations and grain movements were greatly interfered with. The grain producing region of Russia is in the "black earth" district in the south, and in times of peace the grain was moved out through the Dardanelles to the deficit countries. However, the Dardanelles were in the hands of Russia's enemies, who would not let the ships go through; so that grain could no longer be sent to market from Russia.

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1. Explain what is meant by the statement that the price of wheat was fixed naturally by the competition between the countries of the world.

2. Where and what are the Dardanelles? Which country controls them?

3. "Wheat is not used in building battleships or making munitions of war. Therefore the war is not responsible for the higher cost of wheat." What do you think of the reasoning in that statement?

4. "The submarine is responsible for the high price of wheat." Explain. Do you agree?

5. Find out what kind of soil and climate are needed to raise wheat and what kind of implements are used.

6. What States produce wheat in this country? When does the wheat crop mature?



The war on the seas made it more and more difficult to send wheat to France and England from the surplus countries, particularly from those which were the more remote. The price of wheat went higher and higher in France and England and Italy and in the smaller countries of Europe, and there was no prospect of relief through raising a great deal more grain themselves, for great numbers of their men had been taken from the fields for the armies.

#### WHEAT PRICES IN THE UNITED STATES.

Since America, of all surplus countries, was nearest the deficit countries and best connected by shipping routes, it is easy to see that an excessive part of the demand fell upon her. The price of wheat rose in America until by April, 1917, it had reached about \$1.80 per bushel, which is twice as high as the average price for the five years just before the war.

After war was declared between Germany and the United States matters became even worse. Before we entered the war German submarines had destroyed many ships and many others had been taken away from peaceful pursuits to carry soldiers and munitions of war. With the entry of the United States into the war and the prospect of shipping American troops to Europe and supplying them with food and materials, the demand for ships grew more urgent. It became necessary to make plans to get wheat to Europe by the shortest possible route.

This, of course, increased the demands upon our grain. At the same time the uncertainties of war made it hard to tell how much our production of wheat would be interfered with. Then, too, it is generally believed that some persons took advantage of the situation in order to make profit and bought up large quantities of wheat to hold for future sales at a much higher price. Certain it is that by May 17, 1917, the price had reached \$3.50 per bushel.

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1. Find out what the Department of Agriculture has done to improve the wheat crop of the country. Does this have any influence on the price of wheat?
  2. How do the uncertainties of war time upset the system of prices?
  3. How is wheat made into flour?
  4. Where is the flour of this country made?
  5. What is whole wheat flour? graham flour? bran? Of what use is each for food? Is any other use made of bran?
  6. Do we send wheat to Europe in its natural form, or do we make it into flour? Why?
  7. How do railways and steamships enter into the price of wheat?

## CONSEQUENCES OF WAR PRICES ON WHEAT.

Since flour is made from wheat, the cost of flour of course followed the price of wheat. This brought up the price of bread and all the other foods made of flour. Not only so but all the other things that people need for food were affected. Take a single illustration. Rice, which can be used as a food instead of wheat, was produced in somewhat larger quantities last year than usual. When people saw that wheat was getting beyond their purses they began to use rice instead of wheat. This promptly reduced the extra supply of rice and raised its price. In like manner corn began to be used up more rapidly than usual. It is easy to see that the scarcity of wheat meant a general increase in the cost of living.

In Europe, in the meantime, people were obliged to use flour which was coarse or to go without entirely. In July each person in England and France was asked to use only 3 or 4 pounds of wheat flour a week. This means that they were using only three-fifths as much as we use in this country. The privation is harder for them because they depend on wheat flour for food more than we do.

## ARBITRARY PRICE-FIXING UNJUST AND DANGEROUS.

In the midst of this increase in prices suppose our Government had said that wheat should be sold for only \$1 a bushel. What would have been the result. The people who had wheat and had been induced to raise it by the high prices of the year before would have felt that they were being unjustly treated. Still worse would be the consequences for the year following, for farmers would say that \$1 a bushel is so little that they could not afford

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1. What is a grain elevator? What is its place in the production and consumption of wheat?
  2. What is meant by the expressions, "the battle of the plow?" "the soldier of the soil?" "the hoe and the bayonet?"
  3. Mention as many foods as possible in which flour is used.
  4. Why is bread such a staple food? What other foods not made from wheat can take the place of bread wholly or in part?
  5. Ask your mother how many pounds of wheat you eat each week. In what is this wheat used?
  6. Why can not the Government fix prices on whatever commodity it wants?
  7. Home baking is decreasing. Why?
  8. What other things besides flour are used in making bread? Do they affect the price of bread?

to plant wheat, and a very serious shortage would occur in the next crop.

But suppose the Government had said that wheat should be sold for \$10 a bushel. The results would have been equally serious. On the one hand, it would have been necessary for us to change our diet, because not many of us could afford the usual quantity of bread. On the other hand, the high price would have tempted people to use too much land, labor, and capital in raising wheat and not enough in producing other important goods. Either an excessively low price or an excessively high price is unjust and dangerous.

#### HOW THE GOVERNMENT MET THE PROBLEM.

What the Government could do without overshooting or undershooting the mark was to try to adjust prices fairly and at the same time help in the proper use of the supply.

The first steps taken by the President were in the direction of education and persuasion. The people of the country were told of the needs of our Allies and of the importance of saving as much wheat as possible. A food administrator was appointed, and he secured from grain dealers an agreement that they would not speculate in wheat; that is, that they would not purchase lots for the sole purpose of profiting by changing prices.

In the meantime Congress was working on a law intended to relieve the situation. One clause in this law promised farmers that all the wheat produced in 1918 would bring them a price of \$2 per bushel. The purpose of this guaranty was to encourage production. Its meaning is clearly described by Mr. Hoover, the food administrator, in the following statement:

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1. In figuring the cost of his bread the baker counts the cost of materials, the cost of labor, and the cost of machinery used up. How many of these elements enter into the cost of making bread at home? Should all be counted?

2. What machines do the bakers of your town use in making bread? Some of these machines last for years; how then can the baker include the cost of the machines in the price of the bread? Are there any bread-making machines for home use?

3. The Commercial Economy Board finds that the cost of delivering bread which the purchaser might carry home adds to the cost of the bread. Mention all the reasons, personal and national, why that cost should be eliminated.

With the stimulation of \$2 wheat, we are going to have a very much increased acreage in 1918. If climatic conditions are right, we should have 1,000,000,000 bushels. If the war continues, this wheat will be vitally necessary; but if the war should come to an end there will be no foreign market for at least 400,000,000 bushels of this wheat. The Government must then take over the wheat and probably find a market for it at a very great loss.

I should anticipate that the Government may lose from \$300,000,000 to \$500,000,000 on this wheat guaranty if peace arrives before the 1918 harvest is marketed.

The reason why peace would greatly reduce the price is that the wheat of Russia, India, Australia, and South America could then be carried easily to European markets. Mr. Hoover does not look for an early peace, as he states in another paragraph, but he finds it easy to make clear in such a statement what a Government guaranty means.

Another clause in the law passed by Congress gives the President power to organize a wheat purchasing agency which will help to keep wheat properly distributed.

The practical working of this plan is as follows: Under the direct control of the Food Administration, which is the organization that the President has set up to carry out the provisions of the Food Control law, there has been organized a Grain Corporation. This corporation has been given \$50,000,000 with which it can buy and sell wheat, distributing it where it is needed. The

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1. How do newspapers help in informing people of the war-time food situation and the program of the Food Administration? How do the moving picture theaters help? What other means of "education and persuasion" has the Food Administration used? Are there any others which could be used? How could such a situation have been handled before newspapers were so common?

2. What is "speculation"? What bad results might it lead to in times of crisis like this war time?

3. Why was it necessary to guarantee farmers a price of \$2 for wheat in 1918? Why was such a measure desirable even if the war should be over before the 1918 wheat crop is harvested and marketed?

4. "The \$2 wheat guaranty will not increase the wheat crop. Men and farm machinery are necessary." Do you agree? Will the farm machinery be supplied? Is anything being done to insure a sufficient laboring force to handle the wheat crop?

5. Give all the reasons you can why the regulating of wheat prices should be done by the Federal Government and not by State governments.

wheat thus purchased makes a kind of reservoir of wheat in the hands of the National Government. For the period of the war the National Government becomes a very large dealer in wheat and its influence on prices can be used in the same way as that of any other large dealer.

#### PRICE FOR 1917.

The act of Congress had not set any price for the crop of 1917. A committee was organized in August under the Food Administration to decide what would be a fair price. This committee reported that it found \$2.20 to be a price in keeping with all the conditions.

This price can be made compulsory only so far as Congress authorized the Government to step in and actually control selling and buying. Congress has made it part of the law that price fixing should not apply to farmers or to retail dealers. Only large dealers came under the control of the Food Administration. The grain elevators, large mills, and wholesalers were directed to buy at the price fixed and the President, acting through the Food Administration, is able to enforce this requirement with them because he is authorized by Congress to do so.

The action taken served to check somewhat the increase in bread prices that had been going on earlier in the year, but the greatest difficulty in making the price of bread right came from the fact that loaves of bread were so different in different bakeries and in different parts of the country. As a result, customers could not tell whether they were overcharged or not.

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1. What are the advantages of a standard loaf of bread?
  2. What are the advantages of wrapped bread? Where is wrapping particularly necessary?
  3. The Commercial Economy Board found that one element of waste in bread was the practice of the big baking companies to take back from grocers any bread that was not sold. Did that enter into the price of bread? Is there any other reason besides reducing the price of bread why this practice should be stopped?
  4. What is a corporation? How does the Grain Corporation differ from most corporations?
  5. Did the advancing price of wheat mean increasing prosperity for the farmers?
  6. The price of wheat is stated in terms of money. It has been said that the price of wheat goes up when the quantity of wheat decreases (provided our want remains the same). Would the same thing happen if the quantity of wheat and our demand for it remained permanent and our quantity of gold increased?

Therefore, an important step in price regulation is the adoption of rules setting a definite weight for each loaf of bread. The Food Administration made such rules and required all large dealers in bread to produce loaves according to an adopted standard. The loaf must be manufactured in specified weights of 16 and 24 ounces, or, if large, in multiples of these weights. It must have certain proportions of flour, sugar, milk, and fat.

Other regulations were adopted dealing with the selling of bread. These regulations are designed to see that the bread is delivered to the consumer in as economical a way as possible.

#### PRICE REGULATION IS NOT PRICE FIXING.

What has been done by the Food Administration can be understood only when we remember that a great many causes enter into the setting of a price. The price tells how hard it is to get the article and how much people want it. Price is not something that can be changed by a mere word, even when that word is spoken by the Government. The Government and the people must patiently go about a study of conditions. One by one conditions must be taken up, explained, and met so far as possible.

The Government can prevent unjust prices in a measure by persuading people not to waste, by adopting standards for what is sold, and by helping in distribution. This is what the Food Administration is doing. It can not overlook the conditions which caused high prices and it can not suddenly change these conditions. It can not go into homes or retail stores or the farmers' bins and command prices and wheat. It can only help in the intelligent use of the supply, in the better use of the price language between producers and users, and in the future production of a larger supply.

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**LESSON B-16. WHY WE MUST HELP FRANCE.<sup>1</sup>**

All Europe is in a state of siege. The armies and navies of the warring countries are straining every nerve not merely to win victories over the armed forces of their enemies but to cut off whole nations from supplies of food and fuel and the material necessary to carry on war. Germany, Austria, and their allies in the center of Europe are surrounded by a ring of enemies who are trying to prevent these central empires from getting the things they need. By way of retaliation the submarines of Germany and Austria are trying to make the ocean impassable, so that France, England, and Italy may be cut off from sources of supply in America, Australia, and India.

**SIEGES OF CITIES COMMON IN EARLIER WARS.**

History is full of stories of sieges of cities. When the German Army surrounded Paris in 1871 and kept the inhabitants of that city shut up within its walls, starvation soon brought the French capital to surrender. The conditions which resulted from this siege have been vividly described in the stories of the times. The food gave out; sickness and death came to the people until they could hold out no longer against the enemy. With the capture of the French capital Germany conquered the country.

**TO-DAY SIEGES ARE DIRECTED AGAINST WHOLE NATIONS.**

It was undoubtedly the hope and expectation of the Germans in the early days of this war that they could again capture Paris. But the Battle of the Marne destroyed the hope of victory by the conquest of a single city. As the war has dragged along into years, nation after nation has been drawn in, and to-day the rings of national fortifications in Europe have been drawn tighter and tighter, navies have become more and more keenly watchful, while the war has turned into a siege of nations and a contest in national endurance.

Even the neutral nations of Europe, which would gladly be free from the burdens of war, are hemmed in by great warring neighbor nations and are shut off from supplies and from the commerce to which they have a right. Little Switzerland and Holland have been turned into military camps for the one purpose of keeping

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<sup>1</sup> This lesson was prepared by the Public Information Division of the United States Food Administration. By describing in some detail the facts with regard to the privations of France, it aims to serve two purposes: First, it aims to show how destructive war is, and, second, it should stimulate patriotic young Americans to contribute willingly to the efforts of our Government to help France.

out of the war. They are watched on all sides by their neighbors, who give them supplies grudgingly, if at all, and who seize from them every ounce of food and material that can be taken without actually dragging these little States into the war. Never before has there been siege on such a large scale, nor starvation and privation involving so many human beings.

Add to all this the fact that great stores of food have been destroyed as armies have swept over Belgium and Poland, over northern France, over Serbia, Roumania, and northern Italy. These countries have been turned from productive regions into waste territories, and millions of people have been left helpless and starving, dependent on others, and not contributing to the world's supplies.

#### WE MUST UNDERSTAND THE PRIVATIONS OF WAR.

Some one has said that if all the children in the world could understand how terrible war is there would be no more wars after this, for the memory of suffering would check all desire for conquest. The children of Europe will learn the lesson through their own experiences of hunger and privation. The children in America will learn the lesson directly by reading of the experiences of these European nations.

There is another reason why we should learn this lesson. We are called on to help win the war. Some of us have thought of this as meaning the sending of an American army to France. That we must do. But that is only a part of the contribution we must make. This is not a war of battles merely. Europe is in a

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1. What is the difference between a siege and a battle?
  2. What causes a general to adopt the methods of a siege against his enemy?
  3. A blockade is the name given to the kind of siege which a navy establishes by closing the ports of an enemy. Find examples in history of blockades and sieges.
  4. Find out what the German plans were for a quick victory at the beginning of the war. What prevented the success of these plans?
  5. How many nations are now in the war?
  6. What are the rights of a neutral country? How are these rights defined?
  7. The causes of this war have been described in a number of publications given out by different governments. Find out about these publications and consider what their appearance proves regarding the intelligence of people.

state of siege, and we must send food and clothing to France and Italy and England, where the boys and the girls and the women, as well as the soldiers, are enduring hardships which must be borne patiently if the siege is to be withstood.

#### FUEL SHORTAGE.

Some idea of the privations of Europe comes to us from our own experiences. Because we do not have railroad cars enough or men enough to do the work which we have to do in these war times we are suffering from a shortage of coal. We are anxious lest we shall not have enough to supply our factories and heat our homes. The coal for schoolhouses is running short. Before the winter is over the situation may become much worse. Yet our suffering is slight compared with that of France. In that country the rich coal mines are in the northern part, which is overrun by the German armies. Therefore France is dependent on other countries to-day for her coal. England has been sending her a little, but the problem of shipping has become so urgent that not much more coal can be sent across the channel. The people of France are ill-clad because their cloth has given out and because many of their own factories have been closed by the war. Coal sells for \$100 or more per ton, when it can be had at all. Even the hospitals can be heated only part of the day.

Lack of fuel would not be so serious if people were well fed, because the body can make its own heat, provided there is enough food of the right kind. Food is body fuel. If one eats sugar, one can produce body heat. When food is scarce and fuel is gone, suffering becomes more acute. And in France the food supply is very low.

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1. What kinds of food is it best for us to save and send abroad? Why?
  2. How does the destruction of shipping threaten to make us less effective in this war?
  3. In connection with our own shortage of coal, review the facts with regard to the interdependence of workers in all industries. How does this shortage affect the manufacturer of cloth and the baker?
  4. If the coal shortage in this country becomes very serious, who will have a right to the coal first?
  5. Find out the location of the chief coal deposits in Europe.
  6. Italy is worse off in the matter of fuel than France. Why?
  7. What effect does the climate have on diet? Illustrate from what you know of the Esquimos and also from your experience with diet in summer and winter.
  8. What are the best heat-producing foods?

## FRENCH AGRICULTURE CAN NOT GO ON.

Let us try to understand why France has only a little food. In the first place, we must think again of the rich northern Provinces which have been overrun by armies. We are told that the very soil of those once fertile plains is ruined. Soil, or humus as it is called, is a thin surface layer of vegetable matter. Through long years of cultivation this humus has been fertilized and enriched so that it can produce abundant crops. The humus of northern France has been destroyed. The bursting shells and the trenches have turned up the lower layers of infertile earth, and it will require a hundred years before the soil of that region can again produce crops. Yet this was one of the richest farming sections of all Europe. Not only has France been cut off from her rich northern Provinces, but she has unsuitable tools and few workers to till the land which is still given to crops.

One traveler, reporting what he has seen, wrote to the United States Food Administration as follows:

## LABOR SHORTAGE.

When one travels over France one speedily learns the reason for the shortage in the grain crops. It is because there is not the labor to do the farm work. Cultivation has to be left to the old men, the women, and the children. All others have been taken for the armies and the defense of the country.

In crossing and recrossing the French agricultural regions it has been a continual source of wonder to me how the few workers in the fields have been able to produce the crops they have achieved. One sees plows with the handles held by women and the horses led by small boys,

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1. Find some place where a cut or landslide shows the different layers of earth, and measure the thickness of the surface layer in your part of the country.

2. Find out from war maps what part of France has been involved in the war. Also determine from recent maps what part has been retaken by the French and their allies.

3. Can the part retaken be devoted to the purposes of supporting the nation?

4. How far back of the trenches does an army occupy a country?

5. It is reported that Pershing's army included many railroad men, some of whom were the best railroad managers in this country. Why were these men needed in our Army in France?

6. In order to understand what is meant by these statements about shortage of labor you should find out from some report how much labor is required to cultivate crops. Where can this information be found?

women stooping among the long rows of corn, cultivating the ground, groups of women slowly crossing the fields, creeping on their knees, painfully tending the newly planted crops. Occasionally one sees a white-bearded patriarch among the women. I should say that the proportion is roughly one man to six women. This, however, is by no means an official figure. It is only my own rough guess.

There is no wonder that with this tremendous shortage in labor fields are left bare, while those that can be cultivated produce less than the normal amount per acre. What would our western farmers think of turning the land in the spring with long-bladed hoes? Yet I have seen this very thing done in many parts of France because of the dearth of agricultural machinery.

#### SHORTAGE OF IMPLEMENTS.

Most of the farm implements of France before the war were of American make. One saw the American mark on the plows and harrows, the rakes and reapers, and binders and thrashers all over France. Since the war much of this machinery has deteriorated sadly, and a great part of it is entirely unfit for use, because there are not mechanics to keep it in repair, and there has not been the importation of new machines and parts to replace the old and worn-out pieces.

France is a country at war, very really and terribly at war. The invader is on her soil. Her mines and furnaces and factories are in German hands. Her richest manufacturing Provinces are held by the enemy. Her men must go to the trenches to defend their country and drive back the hordes from across the Rhine.

#### SHORTAGE OF GRAINS AND OTHER NECESSITIES.

The result of this shortage of agricultural labor is that France can not raise enough food to keep her people alive. The wheat crop of France is less than half what it usually is. The sugar

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1. Why does inadequate labor produce a small crop?
  2. What is the objection to turning the land by means of hoes?
  3. Why should the French implements of agriculture come from America? In answering this question, look up the history of the harvester and other such implements.
  4. In ordinary times what precautions are taken against the wearing out of machinery other than making repairs when needed?
  5. Good business houses count the wearing out of machinery as one of the costs of operation. Why? Should a farmer do the same? Does he usually do so?
  6. How much does farm machinery affect the output of the farm?
  7. "American homes use more machinery than do the homes of Europe." Give examples of such home machinery. Why do our people use home machinery more than Europeans?

beets which used to give France her supply of sugar are not raised now and could not be manufactured into sugar if they were. And so on through a long list of the necessities of life.

Two passages from another report to our Food Administration tell us what this means:

I have spoken of the scarcity of flour resulting from the shortage in wheat. Let us try to see what this means to France. In the first place, it must be realized that there bread is the staple article of food. It is the base of all meals, especially among the working population. Breakfast consists of coffee or chocolate and bread. Luncheon is bread, soup, coffee, and often, though not always, some meat or fish and a vegetable. The big dish is bread. Bread is again the base of dinner or supper, however the meal may be called. Bread and cheese will make an entire meal for a French peasant, with a glass of wine to wash it down.

If one is keeping house, one finds that one must have a "sugar card," permitting him to buy a stipulated amount of sugar in a month. The allowance is  $1\frac{1}{2}$  pounds of sugar a month if three meals a day are taken at home, 1 pound if two meals are taken at home, and  $\frac{1}{2}$  pound if only one meal is taken at home. This means for the person who takes three meals a day at home 18 pounds of sugar a year. The annual sugar consumption per person in America is 85 pounds.

It is soon learned also that the "sugar card" does not mean that one can demand a pound and a half of sugar a month, but only that one is permitted to buy that much, provided a dealer can be found who has it to sell. A dealer who has sugar will not sell it to anyone who comes in. He sells only to his own regular customers.

We paid last winter in Paris 11 cents apiece for eggs and \$2 a pound for butter and there was frequently neither butter nor eggs nor milk to be had. Private families were allowed to buy one-eighth of a pound

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1. Try to discover where shortages have occurred in our own country during the past years. What are the results following on a shortage? Who suffers first?

2. In spite of the shortage, France keeps the army fairly well fed. Why?

3. If France can not raise wheat, she should borrow money from America and buy what she needs. Discuss this statement.

4. What part of the diet of an American family is bread?

5. The quality of flour used in France to-day is coarser than usual. What part of the wheat do we use in the best grade of white flour?

6. If there were a shortage of flour here, what would we do?

7. In order to understand how the food cards are used in Europe, describe some of the different ways in which ticket systems are used in this country to direct the use of the things we want. Think, for example, of a library card or of a ticket of admission.



of flour at a time. The grocers could not sell flour, only the bakers. The flour mills could not choose their own customers nor could the bakers and restaurants choose the mills they would buy from. Lists were made out, telling each miller to whom he could sell. This was in order that one section should not be able to eat up the stock of flour belonging to another section, or one baker deprive the customers of another when all were short.

#### SHORTAGE OF MEAT.

Nor is this the whole story of the shortage of food in France. The meat supply is giving out and with it the dairy supply, because the herds of cattle have been killed for food and for lack of the necessary fodder to keep them alive. This shortage will reach far beyond the period of the war, since it requires long years to raise enough cattle for the use of a nation.

Here again the report of an observer in France will help us to understand how the people are suffering.

Cattle feed is short in France, and the cattle are poor and under weight. More of them have to be killed in proportion to supply the needed quantity of meat. Milch cows have been killed and the shortage of proper feed has reduced both the quantity and quality of milk. Why, I have seen the time when it has been next to impossible to get milk for my little baby in Paris. I have gone from store to store, begging some one to sell me as little as 2 cents' worth of milk for my baby.

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1. Mention the various kinds of food secured from herds of cattle.
  2. The number of deaths among babies in Europe is said to be very great on account of the shortage of food. Why is a baby more affected by shortage than an adult?
  3. Suppose the Government took no hand in controlling the food supply. What would happen?
  4. Do you favor the issuing of food cards at this time by our Government?
  5. If you answer the above question in the negative, can you think of conditions under which you would change your answer to the affirmative?
  6. What can a single individual do in order to help the people of France?
  7. France has been chosen as a single example. Can you find what is the condition in England? In Italy?
  8. The defeat which Italy suffered in November, 1917, is attributed by some writers to lack of proper food. How could lack of food result in defeat?
  9. The morale of nations depends on their food supply. What does this statement mean?

The Government is trying to conserve the meat supply and save the herds now by limiting the use of meat to one meal a day. The endeavor is made to accomplish this purpose by forbidding the sale of meat after 1 p. m. and ordering the butcher shops closed at that hour while hotels and restaurants can serve meat only with the noonday meal.

#### GOVERNMENTAL FOOD CONTROL.

So serious is the situation in France that it is one of the principal problems of the French Government to get food and distribute it fairly to the people. The sugar cards and bread cards show that the nation has had to take the food supply in hand and watch it as essential to the life of the people.

#### UNITED STATES FOOD ADMINISTRATION.

Our own Government has organized a department known as the Food Administration, which is working with France and our other Allies in trying to meet their needs. We have more than we need. Our Allies in Europe are under siege, and we must send help. We in this country are not yet called on to submit to restrictions by our Government as drastic as those now in force in Europe. We do not have sugar cards and bread cards, but we are asked to learn about the needs of our Allies in Europe and through voluntary regulation of our diets and through increased production to help them survive the siege.

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## Chapter V.

### CUSTOMS, LAWS, AND FORMS OF GOVERNMENT.

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As the previous chapter dealt with the organization of the National Government, so this chapter is devoted to local government and local laws. There is a marked difference in our system between the kind of laws which Congress enacts and the laws passed by the State legislatures. The reasons for that difference are easy to understand if we know the history of the formation of our Government. When the people of the 13 States united to establish a Nation, they were careful to retain in the States all the powers of government except those which they knew the States could not well exercise separately. Thus it happens that the National Congress deliberates upon matters like the Army and Navy, the post office, the tariff, and international relations; and the State legislatures pass laws that control the dealings of man with men, the public schools, the maintenance of order, and the like.

It is not so in many other countries. The same British Parliament which controls the prosecution of a world war and deals with all the weighty problems of a vast empire, was torn asunder a few years ago over the question whether a man should be permitted to marry his deceased wife's sister. The same legislative body which controls national affairs, also controls domestic relations and local matters as well. A similar combination of functions may be found in most of the parliaments of Europe. It seems strange to us only because we are accustomed to a very different condition, which arose from the fact that ours is a nation formed of many parts, and by them.

The first lesson of the chapter gives a definite historical example of the way in which our local laws evolve from practical custom. The courts, through interpretation of customs, have a large part in fixing the laws of a country; and the legislatures as well as the courts are influenced by customs.

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#### LESSON B-17. THE DEVELOPMENT OF A SYSTEM OF LAWS.

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The laws under which we live and the forms of government which enforce these laws have grown up gradually through long periods of history. This history reaches back in the case of a young country like ours to the earlier periods when European countries were emerging from the barbarous condition, in which the only law was that of military power, into the civilized condition, which recognizes law and order as necessary for the development of community life. Our own American law has its roots in the practices of England. Much of it comes from what we call "the common law" of England. This common law originated in the habits of our English forefathers and in the decisions of

certain courts which the Kings of England set up to settle disputes arising between their subjects. The English common law is nothing more nor less than the explicit formulation by courts and law-making bodies of those customs which the community developed as the means of protecting people and property.

#### COMMON LAW.

For example, each man's house is his own sacred domain. It may not be entered by another member of the community without the owner's consent. This fundamental principle of English common law is in force to-day and is upheld by our courts. It requires the action of a magistrate to enter a man's house, even if that man is known to have in hiding in his house property which he has stolen. Police may enter the house of a suspected thief, but in order to do so they must have the backing of the whole community in the form of a warrant issued by a magistrate. Against anything but a publicly approved search the common law defends the owner of a house.

When a modern legislature passes a law, this law must not violate the spirit of the ancient rights set up and recognized by common law. The courts will defend the common law even if it is not explicitly reasserted in a modern statute, and modern legislation, even where it deals with situations unknown in earlier times, is guided and controlled by the principles of ancient and well-established custom.

#### MERCANTILE LAW.

In many cases it is not possible to trace laws to their remote origins. There is one set of laws, however, which has so definite and relatively recent a history that it is possible for us to trace

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1. What forms of government are there that differ from that under which we live?

2. Sometimes martial law, as it is called, is declared and takes the place of ordinary law. What are the conditions under which this happens? What is martial law?

3. There is a form of law known as ecclesiastical law. How does this differ from ordinary law?

4. Throughout the discussions of law keep in mind the fact that there are laws which apply to the schoolroom. Are these products of gradual development of customs?

5. What is a search warrant and how can it be issued?

6. What is a writ of habeas corpus and how is it issued?

their official recognition with a good deal of definiteness. These are the laws with regard to mercantile practices, especially those which relate to bills of exchange and other forms of credit paper such as promissory notes and checks.

In the reign of King George II England had grown to be the greatest manufacturing and commercial nation in the world. At various centers great public fairs were held each year at which merchants from all the civilized world came to sell their goods. From these same fairs the foreign merchants carried back the products of English workshops. English merchants went to the fairs held in continental cities, and English ships carried goods to all the countries of the world.

#### SPECIAL MERCHANT COURTS.

At these fairs questions came up which the local courts could not deal with at all satisfactorily. The local courts which for the most part administered justice among the farming people of the countryside were very slow in their judgments and were guided by the practices and customs of the English communities to which they belonged. The whole system of rural life in England was different from the bustling busy life of the fair. The fair was in reality an international meeting held on English soil. The business of the fair had to be carried on rapidly and with due regard to the habits of all kinds of foreigners who brought with them customs and expectations wholly different from those of the English city or village or rural community.

Out of the need of justice of a type wholly different from that which the local courts could administer grew certain merchant courts. These were held at every fair and were summary in their treatment of cases. They were called "Courts Piepoudre,"

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1. What other examples than that in the text can you give of the fact that the community sets aside at times the rights of individuals?
  2. Can you connect these examples with the whole discussion of law to show that law is an expression of community interests?
  3. What is a mob? What is meant by the term "mob law"?
  4. Is it right for a group of citizens to take the law into their own hands?
  5. There is a type of law known as international law. Is this enacted by any lawmaking power?
  6. How is international law enforced?
  7. When is the term "statute" applied to law? Are all laws statutory?
  8. What are some of the common forms of "credit paper"?

because justice was administered "while the dust fell from their feet." There was none of the long deliberation which characterized the local courts.

#### CUSTOMS OF MERCHANTS.

The principles on which these merchants courts proceeded were the "customs of merchants"; that is, they asked in every case what was the ordinary practice and compelled contending parties to accept the usual method of dealing.

Some of the customs of merchants were difficult to understand. For example, any merchant might claim a share in a butcher's purchase if he were present at the time the butcher purchased the meat, provided he offered to pay a part of the purchase price. We find a record of one Nicolas Legge who sued Nicolas Mildenhall, a butcher, for not living up to this "custom of merchants."

We find other curious facts about these merchant courts. At first these courts refused to deal with anyone except merchants. If a man became involved in a quarrel with a merchant, he could escape the judgment of the court by showing that he was "not a merchant but a gentleman." Later the courts found it necessary for the protection of merchants to hold that a gentleman as well as a merchant must pay his debts.

#### CONTRAST WITH COMMON LAW.

How different the "customs of merchants" were from the customs and laws of England can be illustrated by a single example. If a man bought a horse in an English community and it appeared afterwards that the horse had been stolen by

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1. Why is modern trading not carried on at market fairs as in earlier days?
  2. What advantage does a nation derive from expositions?
  3. What are some of the most recent national expositions?
  4. What were the general historical conditions in England in the time of King George II?
  5. Why should local courts be slow? Even to-day courts move slowly. Why is this so?
  6. Suppose a foreigner is trading to-day in this country. What are the methods adopted by his own country to protect his interests?
  7. Can you see any explanation for the custom described in the text about the butcher's trade? Remember that merchants from foreign parts had to buy food.



the seller, the person who bought the horse could not claim a right to it, because it was a rule of common law that no person may sell what he does not own.

Suppose this rule were applied to the trading in a market. Every time any purchaser tried to get anything in a market he would have to ask whether he was buying from the rightful owner. Traffic would evidently be seriously delayed by the constant suspicion that the person who was selling something did not have a right to transfer the title to what he was selling. The merchant courts took, therefore, an entirely different attitude from the courts of common law. They held that the purchaser of a commodity might assume that the person who had it in hand had a right to sell it. This was the common practice among merchants and was a very much more expeditious way of carrying on dealings than any which would have been possible under the common law.

#### LAWS AS OUTGROWTHS OF CUSTOMS.

The examples which have been given up to this point ought to serve to teach two impressive lessons. The first is that law grows in many cases out of custom. Whether the court is dealing with common law or merchant law, it is evident that in both cases it is the practice of the community which the court is enforcing. The court therefore originates the law only in the sense that it attempts to interpret the practices of the community and to enforce what has been the previous practice.

The second important lesson is that systems of law may grow up in accordance with different types of needs. The law of the merchant was different in its character from the law of the community. The reason for this difference is in many cases perfectly

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1. Laws must be particularly strong to protect traders against fraud. Show how the Government takes special precautions to make money of all kinds safe against fraud.

2. How does the law protect the receiver of a check? How does the receiver of a check help to protect himself against fraud?

3. Mention some customs which are practiced in the community which have never been enacted into laws.

4. There are rules of the family which the city and State do not lay down and others which the State sanctions by law. Give examples of each kind.

5. Who makes the laws of a school?

6. Who makes the laws that govern the players in a game?

clear the moment we consider the difference between the two types of transactions.

#### CONFLICT BETWEEN MERCHANT LAW AND COMMON LAW.

A little consideration will prepare us for the third important lesson with regard to the origin of laws which comes from a study of the later history of the common law and the law of the merchants. It was quite possible in the early days when government was somewhat haphazard for courts of different kinds, governed by different sets of customs, to administer justice side by side. But as government grew more stable and as it aimed to control community life in all directions, the different kinds of law had to be brought together and made part of a single general plan of government. In other words, common law and the law of the merchants could not forever remain separate and contradictory.

In the latter part of the sixteenth century and the beginning of the seventeenth the special courts for merchants began to die out and the cases all went over to the King's courts which administered the common law. When a merchant's case was thus taken up by one of the King's courts, the effort was made to settle matters according to the customs of the merchants. The result was that cases were referred to the juries without any instructions from the judges as to the law. The judges recognized the fact that their own training in the common law did not prepare them to give juries instructions about the customs of the merchants; so they turned the whole matter over to the juries to decide. The jurors in turn usually knew little or nothing about the customs of merchants and rendered judgments which exhibited little sympathy for these customs.

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1. A constitution is a means employed in a modern State to unify all the laws. Find out what a constitution is. Find out the difference between a written constitution like that of the United States and an unwritten constitution like that of England.

2. What is meant by the statement that a law is unconstitutional? Who decides?

3. What is a jury? Who sits on the jury and why is trial by jury regarded as fairer than other kinds of trial?

4. What are some of the kinds of trials which must be before a jury?

5. There are special kinds of courts in our own day which try to get special information about particular kinds of cases. Find out what a juvenile court is.

## MERCHANT LAW BECOMES PART OF GENERAL LAW.

The difficulties were ultimately cleared up by the wise policy of Lord Mansfield, who became chief justice of England in 1756. He saw that the customs of merchants must be respected and that at the same time they must be brought into harmony with the general law of the land. He accordingly began to direct systematically the action of the courts under his charge to this end. In the first place, he selected jurors for the cases involving merchants' rights with a special view to getting as much sympathy as possible for the ancient customs of the merchants. He saw to it that all cases of that type were referred to these special jurors. At the same time he used these people as sources of information on his own part. He got into personal contact with them, engaging them in frequent conversations. Indeed, as one of his biographers tells us, he went so far as to invite them to dine with him. All the time that he was getting information he was explaining the principles of jurisprudence by which the courts ought to be guided.

## PROGRESSIVE CHARACTER OF ALL LAW.

Thus, under the wise leadership of the chief justice of the nation the customs of the merchants were gradually worked over into a form in which they could be recognized as part of the general law of England.

Nor did the development of the law of merchants cease when Lord Mansfield was no longer chief justice. From his day to the present, courts have been engaged in finding out for each trade and each kind of business what are the best practices. Many a case comes up in all the courts which is not covered by any statute passed by the lawmaking branch of the government. It is the duty of the court in such cases to attempt to adjust matters in terms of the customs of the trade and in conformity with the spirit of the general law of the land.

When a certain problem has come up again and again in the courts, the attention of the lawmakers is commonly called to

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1. History gives good examples of laws which are not enforced. Find out what "blue laws" are and why they were allowed to fall into disuse.
  2. What is meant by the repeal of a law?
  3. Can you find out about any law in your own town which is not fully enforced? What about the game laws of the country or the laws about street peddlers in the city?

the need of a specific pronouncement on the matter in the form of a statute or a law. This law in turn is no arbitrary treatment of the cases, but follows as closely as may be the practices of the trades and the judgments of courts. If the law attempted to ignore the whole body of accumulated experience, it would disarrange business and because of the lack of sympathy of those to whom it applied it would lack support. When, on the other hand, a law is formulated with regard to the experience of interested parties it will probably be just, because in the long run only just relations survive. Furthermore, it will be easy to administer because it will follow the lines of well-established practice.

#### LAW AS A FORM OF SOCIAL ADJUSTMENT.

We see, accordingly, from this clear historical example the justification for the statement that law grows out of practical adjustments. First, men work out certain customs in their efforts to deal with each other. Second, these established practices are applied to difficult situations by courts. In the hands of the courts customs receive public recognition and sanction. Finally, the decisions of the courts are brought together into systems of laws and are adopted by well-established governments as statutes or explicit written laws.

Of course there will always remain spheres of community life in which the rules of conduct are not fully laid down. Laws are always in process of formulation. There will always be court decisions which are taking up customs and giving them recognition. Thus community life is always moving forward and furnishing in new customs and new court judgments the basis for new laws.

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LESSON B-18. HOW STATE LAWS ARE MADE AND ENFORCED.<sup>1</sup>

A group of people who lived in one of the cities of the United States were discussing the board of education which had charge of their schools. The board had refused to furnish medical inspection for the schools, saying it was too expensive, and had refused to rent a school auditorium to an association of citizens for a public lecture. "The board of education does not represent the city and we ought to change it altogether," said one of the members of the company. "But we can not get rid of this board; it is appointed by the mayor and has power over the schools," came the reply. "The real trouble is that the board is much too large; its members do not take their duties as seriously as they would if there were fewer members on the board," was the judgment of another member of the company.

They decided to try to bring about a change in the size of the board and in the way its members were appointed. They thought it would be better to have the members of the board elected by popular vote rather than appointed by the mayor.

## SCHOOL BOARDS CREATED BY STATE LAW.

When these people started out to get the board changed, they learned a great deal about the way in which laws are made and changed, and they were a great deal wiser about the way in which their city is governed.

They found, in the first place, that there was a State law which created the board of education and described its rights and duties. This State law gave the board, as the head of the school system, certain powers which make it quite independent of the city government. They learned also that not only the board of education but all branches of the city government are created by State law. The city has no governing powers except those granted to it by the State. Nor does the board of education have any powers except those given it by the State. Education is therefore a State matter referred for management in given localities to a board or committee created to do the State's work. The State law about the board of education applied to all other cities of the same class in the State; so our reformers secured

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<sup>1</sup> This lesson was prepared by Glenn Edwards, executive secretary of the Public Education Association of Chicago. It aims, through the study of a concrete case, to show how a State law is enacted. The structure of the State government is revealed by this description of its law-making and law-enforcing activities.

the help of some people in the other cities, thinking that it would be best to get as much cooperation as possible.

#### THE DRAFTING OF A PROPOSED LAW.

What they had to do was to get the State law changed. A member of the State legislature who was elected from their city agreed to help them. He told them that they ought to write out very carefully a statement of what they wanted and then let him and some of the lawyers in the city rewrite it in the form of a proposed law. This proposed law he said he would introduce as a bill at the next meeting of the legislature. He said:

But you know I am a member of the lower house, or house of representatives. You had better make arrangements with some member of the upper house, or senate, to introduce your bill in the senate also. It is not necessary to have the bill introduced in both houses, for if it passes one it will be sent to the other. It will be taken care of more quickly, however, if it goes into both houses. Be sure to have the bill in my hands early, because, as you know, after a certain date no new ones can be brought in.

After many conferences a bill was prepared which represented the wishes of most of those who were interested. It is not always true that bills grow out of such conferences. Sometimes they come from one person, sometimes from a member of the legislature; sometimes the governor sends a message to the legislature calling attention to the need for a law.

#### THE FIRST READING.

The legislature was not in session when the bill was first drafted, but as soon as it met the representative who had promised to

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1. The criticism that public officers do not represent the people is sometimes heard. What is meant by calling our government a government by representation? Who elects representatives? What other representative bodies can you mention in your town or State besides the school board?

2. Who is the mayor in your city or in the city nearest to your school? When is he elected?

3. What is the size of the school board or committee in charge of your school?

4. How are the members appointed or elected?

5. What advantages would there be in electing members to a board rather than having them appointed? On the other hand, what advantages are there in having members appointed?



help introduced the bill. Its title was read; it was given a number and was ordered to be printed. It is the practice of legislatures nowadays to print bills rather than have them read aloud in full. It would consume too much time to read all bills before the legislature. The phrase "first reading" is used for the presenting of a bill. This phrase goes back to the days when it was read aloud in full.

#### THE BILL REFERRED TO A COMMITTEE.

The bill about the board of education was referred to a committee of the house of representatives at the same time that it was ordered printed. It has become necessary to refer bills to committees because of the great number of bills presented to legislatures and because committees are supposed to be made up of men especially interested and qualified to pass on certain kinds of bills. In this case the bill was referred to a committee on schools. This committee receives all bills relating to schools and studies them while other members of the legislature are studying bills on roads or banks or other matters.

The bill could not be made into a law at the first reading, even if everybody was in favor of it. The rules of the legislature require that the bill shall come up for second and third readings. The rule makes it certain that there will be full debate and gives anyone who is opposed to the bill time to make his objections known.

Referring a bill to a committee also helps to make it certain that the matter will be carefully considered from every possible

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1. How often does the legislature of your State meet?
  2. Find out what requirements must be fulfilled before a man can be elected to the legislature. Are the requirements the same for the two houses?
  3. Who can vote for legislators?
  4. In how many States in the Union can women vote for legislators?
  5. Find out how legislative committees are made up.
  6. By reference to a book of parliamentary rules find out the difference between standing committee, committee of the whole, and special committee.
  7. In an ordinary meeting what precautions are taken to insure complete consideration of a motion before it is voted on?
  8. What is the chairman of a meeting? Who are the chairmen of the two houses of the legislature?
  9. "Parliamentary law is made for the protection of the minority." What does this statement mean?

point of view. Each committee goes over, in connection with each bill presented, all related matters which come before the legislature at that session.

It often happens that a bill gets no further than the committee. The members of the committee see that the bill is not wise, or they think that it ought not to pass, and so they take no action and the bill never is heard from again. A great many bills disappear in this way, by failure of the committee to act. They are said to be pigeonholed or buried in committee.

#### A COMMITTEE HEARING.

In the case which we are following, the committee on schools saw that the bill referred to them was important and set a day to discuss it. They let the friends of the bill and those who were opposed to it know that they would take up the debate on the bill on a certain date. The meeting of the committee was public and was called a "hearing." At this hearing various people spoke for and against the bill, and the members of the committee asked questions and expressed their judgments.

In the course of the hearing it became evident that the bill would be improved by adding certain paragraphs, changing certain words, and leaving out certain parts. These changes, which are called amendments, were voted on by the committee and it was decided to recommend a number of them to the legislature.

These changes were made by the committee in spite of the fact that the friends of the bill were sorry to see some of them made. Those who had prepared the original bill could not control the action of the committee. Only members of the committee could vote on the amendments.

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1. Is it just for a committee to suppress a bill?
  2. In the case of a committee hearing the ordinary citizen has an opportunity to be heard. Can a citizen appear on the floor of the legislature and take part in debate?
  3. What is the right of petition and how is it exercised?
  4. How are amendments made in an ordinary meeting? Why does parliamentary law put restrictions on the number and form of amendments?
  5. What is meant by the word "filibuster"? Is it right for the minority to filibuster?
  6. Bills are sometimes changed in passing through the legislature by the addition of what is called "a joker." What is a joker?

## THE SECOND READING.

After making the amendments and discussing the bill, the committee voted to recommend the bill to the house of representatives for favorable action. On hearing this recommendation the house gave the bill a place on the calendar; that is, it was agreed that at a certain time it should have a second reading.

When the time came for the bill to be taken up according to the calendar, the number and title of the bill were read; members of the house got out their printed copies and a general discussion began. Several members of the house asked questions and some speeches were made "on the floor," that is, by members. Amendments other than those reported by the committee were proposed and some of them were adopted. The bill in its revised form was now sent back to be reprinted, so that it might come up at a later date for its third and final reading.

Some of the amendments improved the bill; some did not improve it but were accepted by friends of the bill because certain legislators said they would vote against it if the changes were not made.

## THE THIRD READING AND CONFERENCE.

At the third reading the bill passed. The speaker of the house signed it and it was sent to the senate. In the senate the same bill had been making progress, but the amendments adopted in the senate were not like those which had been passed in the house. Therefore, the bill with its two sets of amendments was sent to a committee called a conference committee made up of members of the house and members of the senate. The conference committee studied the various amendments and decided on a form for the bill which seemed acceptable all around.

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1. What is the meaning of the word "lobbying"?
  2. All through the discussion of a bill changes have to be accepted in order to satisfy the majority, or secure enough votes to pass it. What is meant by the statement that our Government is a government of majorities? What other kinds of government are there?
  3. While considering State legislatures and their action, consider also the National Government. What is the law-making branch of the National Government?
  4. How is this law-making branch of the National Government elected?
  5. How many ways are there of voting on bills in legislatures and on motions in ordinary meetings?

All this debate and comparison seemed very tedious and useless to some of the friends of the bill; but a law, when it is once enacted affects so many interests that there can hardly be too much deliberation in getting it into the best possible form. The whole organization of the legislature is intended to secure full representation and consideration of all possible interests. The members of the two houses are chosen by different parts of the State. They are mature men chosen by the people in their districts. They are divided into the two houses so that they will check each other. Time is taken in putting a bill through so as to insure as full debate as possible. All this is what we refer to when we speak of our Government as a representative or republican form of government.

#### THE GOVERNOR'S SIGNATURE.

After the bill had passed through the conference committee, it was adopted by both branches of the legislature. It was then sent to the governor. The governor can prevent a measure from becoming a law by vetoing it. Some of the citizens who had been opposing the bill asked the governor not to sign it. They said that if he would hold a hearing they would appear before him and would give their reasons for thinking that the bill was not a good one. The governor set a date and again the friends and opponents of the measure appeared to argue for their positions.

If the governor vetoed the bill, there would still be a way of enacting it into a law. A two-thirds vote of both houses of the legislature could pass it over the governor's veto, but everybody knew that it was not likely that the legislature would supply such a majority to override the governor. It turned out in this case

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1. Suppose a law is passed hastily or is for some other reason allowed to go through with serious defects. What can be done?
  2. The cost of the discussions which precede the passage of bills is large. How does the State pay for these discussions?
  3. We use various names for our Government, sometimes speaking of it as a republican government, sometimes as a democratic government. What do these names mean?
  4. What qualifications must a man have to be governor?
  5. Who votes for him?
  6. No officer in the United States has an absolute veto. What is an absolute veto and where in the world does it exist?
  7. What happens if the governor does not sign or veto a bill?
  8. Does the president of a club have the power to veto the motions carried by the club?

that the governor was satisfied with the bill in the form in which it came to him. He signed it and it became a law.

The law reduced the number of members on the board, but did not provide for their popular election. It provided that the mayor should appoint the members with the approval of the common council. This is the method which the State often adopts for appointing a board. Once the board is made up, the mayor and the council do not control its educational policies. The board has rights and duties of its own directly under the State law. The friends of the plan for electing the board were much disappointed that the appointment was left with the mayor, but glad that a change in the number had been made, and set about trying to get the mayor to appoint the kind of people whom they approved.

#### DELAY IN EXECUTION AND COURT ACTION.

The mayor delayed for a long time the presentation of new names to the council. During this interval the old board continued to hold office. Matters drifted along in this way until finally the friends of the law grew impatient and presented a petition to one of the State courts asking for an order to compel the mayor to do the one thing that he should do in the matter of schools, namely, appoint the board and so put the new law into operation.

#### DIVISIONS OF THE GOVERNMENT.

This stage of the case shows very strikingly that there is a difference between passing a law and putting it into effect. The fact that an appeal was made to a court also brings our attention to the importance of the judicial branch of the Government. The

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1. Mention a number of public officials whose duty it is to execute the law.

2. In an ordinary club who are the executive officers?

3. Judges in the courts are not expected to take as active a part in party politics as other officers of the Government. Why should this be done?

4. There are certain courts which are called supreme courts. What does the word "supreme" mean in this case?

5. The powers of a city council are limited by the city charter which is granted by the State. Can you think of reasons why a city council should be limited in its powers and subject to State legislation?

6. What is the difference between the powers of a city government and those of a village government?

legislature is the lawmaking branch of the government. Secondly, there are certain officers, known as executive officers, who are charged with the duty of setting the laws in operation. Finally, there is the judiciary, or the courts, which can be appealed to whenever for any reason the law does not operate smoothly. In fact, the courts often aid in executing the laws, and by explaining the meaning of laws they enlarge the law itself.

No government could be complete without lawmakers, executives, and judges. Indeed, the important fact about a law is not that it is enacted, but that it is put in operation and kept in operation. It is interesting to note that the execution of the State laws about schools is a duty of the board of education and its officers. The city government in its other departments is often separate from the school district which is set up in a city by State law.

#### NATIONAL LAWS AND CITY LAWS.

The account which has been given of the way a State law is passed could be paralleled very closely by describing the way in which laws are made by our National Government and by our city governments. The Nation has two Houses of Congress which act in much the same way as the two houses of a State legislature. The President of the United States has the power of veto over the acts of Congress. It is also his duty through the executive departments of the Federal Government to enforce the laws passed by Congress. There are Federal courts which pass on those matters which come up under national laws.

Most cities have a mayor who has the power of vetoing the ordinances passed by the city council. The city council is somewhat like the State legislature, though it is not ordinarily divided into two houses. There are municipal courts which take up minor suits. City government is much less uniform than the government of States. It is not possible, therefore, in this case to make as general a statement as can be made with regard to the governments and lawmaking activities of States and of the Nation.

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LESSON B-19. THE COMMISSION FORM OF CITY GOVERNMENT AND THE CITY MANAGER.<sup>1</sup>

Americans have been aware for a long time that their city governments in many instances are not doing the business of the city very successfully. Sometimes elected servants have proved to be both incapable and dishonest. Money has been collected in taxes and disappeared like water in the sand; police forces have been clumsy, and have even made alliances with the enemies from whom they were sworn to protect the city; crime has been made a source of profit. Health departments have been lax and ignorant, and have in some cases even turned aside from the warfare on preventable disease and death in order to favor powerful friends or punish enemies. Streets have been ill-paved and dirty, though enough was paid for good and clean ones. Overcrowded and unwholesome tenements were allowed to go up where, in spacious America, they need not have been. As a result of insanitary conditions, thousands of little children have died who might have lived. Street railroads and gas companies and water companies and electric light and power companies have been allowed to give too little service for too high a price. Public officers, chosen to do the city's business, have turned to serve themselves or the political machines to which they belonged. People in city after city have seen these things and were angry; but it was not easy to know what to do about it.

## SPASMS OF REFORM.

What people did was natural enough. They let their indignation smoulder until it got too hot to restrain or until some especial scandal brought matters to a head. Then there was a "reform campaign," they raised the cry of "turn the rascals out!" and, partly or completely, swept the offenders out of office. Satisfied with their success, they went back to their private business and sooner or later awoke again to find the old powers reestablished and the old muddle resumed. So it has been in New York and Philadelphia and Chicago and scores of smaller cities.

## DISCOURAGEMENT AND ABANDONMENT OF REFORM.

Many who considered themselves good citizens became discouraged and gave up the fight. "All politicians," they said,

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<sup>1</sup> This lesson was prepared by Frederick D. Bramhall, instructor in political science, University of Chicago. It shows how the tendency to simplify city governments has spread and how as a result new forms of city organization have been worked out.

"are rascals. What is the use of taking time and trouble to try to win an election? Elections are sham battles between Tweedledee and Tweedledum. We shall mind our private business and let politics alone." So they stopped voting; and if they wanted a service from the city, they often got it as it seemed easiest to get it, without being too particular about the means; and if they wanted to be let alone, they arranged in the same way to be let alone. In this way they helped to support bad government for themselves and the rest of us, although they still often denounced corruption and ignorance among voters and still considered themselves good citizens.

#### THE CAUSES OF FAILURE.

Many others, however, were not content to let conditions stand or merely to change them temporarily by short-lived reforms. If city government was generally so poor, was it because human nature, our American human nature at least, was corrupt? Or was it, perhaps, because the kind of city machinery of government we had was more than human nature, either in its officers or in the voters, could be expected to manage?

The more intelligent men studied our city governments the more they came to the conclusion that the form of organization of these governments is too complicated and involved; that it is doubtful whether even men of extraordinary ability can make them work smoothly. The difficulty is so great that under ordinary circumstances men of large ability are unwilling to sacrifice themselves in so hopeless and thankless a task. Beyond that it is impossible to expect the voters to keep watch successfully over so loose-jointed a system, with so many separated parts and dark corners.

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1. Give examples of criticisms that you have read in the papers of city governments.
  2. Should these criticisms when seen in the papers be accepted as always true?
  3. Newspapers are usually affiliated with some political party. Are their criticisms of city government in anywise influenced by this fact?
  4. Cities frequently have difficulty in getting the best citizens to become officials. Show some of the reasons why this is so.
  5. What is the organization of the police department, the health department, and other subdivisions of the city government?
  6. Explain why insanitary conditions and bad tenements appear in cities, since it is well known that they are undesirable.

A very large part of the trouble grows out of the fact that we are unwilling to trust with power those who govern. All sorts of checks and balances have been set up. We have in our cities large city councils, made up of aldermen elected from small wards. In some cities we even have two councils checking one another. We have a mayor, elected by the people, and in most cities a series of heads of departments also elected by the people, or sometimes appointed by the courts or by the governor. The mayor does not guide the council and the council does not control the mayor. The departmental officers are handicapped and discouraged by lack of harmony and cooperation; and the voters are confused and discouraged by too many separated officers and the want of anyone to hold definitely responsible when the common business is mismanaged. It is largely because of this confusion and discouragement that it has been so easy for political machines with skillful professional politicians to weather storms of reform and come back serenely into power when the storm is over.

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#### NEED OF SIMPLIFICATION.

Careful students of the situation who had studied these complications began some years ago to advocate changes in municipal government with a view to making these governments simpler and more direct, easier to work and to understand. All over the country people were beginning to believe in simplification and to ask themselves how this could be brought about.

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1. If a merchant wishes to store some of his goods on the sidewalk, how does he get permission to do it? What unwise methods of securing this permission are sometimes adopted?
  2. If a builder wishes to unload his material in the street in front of the building which he is putting up, how does he secure permission to do this?
  3. Whose duty is it in a city to see that furnaces in houses and factories do not give out excessive smoke?
  4. Is it right for a family which has a contagious disease not to report this because the family will be quarantined if it reports?
  5. If an individual citizen sees his neighbor doing something that he ought not to do, is it as much his duty as it is the duty of a public official to deal with the matter?
  6. How can an individual citizen properly deal with the failure of his neighbors to comply with the law?
  7. What are some of the conditions that tend to make modern city government complex?

## GALVESTON.

Just at this time, the hurricane and tidal wave of September, 1901, nearly swept away the city of Galveston, on the Texas coast. When Galveston found itself in ruins, its people decided that there was no time or energy to waste over its old bad government. Things must be done energetically and honestly. They induced the Texas Legislature to provide, for the time being, that the city should be governed by five men consulting around one table. These men were, after the first few weeks, to be chosen by all the voters of the city, so that the best to be had could be chosen. Ward lines were abolished. That was all. There was no separation of powers, no checks and balances, no confusion, no uncertainty. If a thing were to be done, these five men had power to do it; if a thing were done badly or left undone, these five men were responsible. It was simple.

Moreover, it worked. The rebuilding and government of the city were done honestly, intelligently, vigorously. Galveston decided it did not want to go back to the old system. Other Texas cities begged for the same plan of government, were given it, and liked it. All over the country, people who had been thinking of simplicity looked at the Texas cities and instead of saying, "It might be done," began to say, "It has been done," and to urge a trial for the commission plan of city government.

## THE DES MOINES FORM OF COMMISSION GOVERNMENT.

The commission plan spread slowly, northward and eastward. In 1906, the city of Des Moines, Iowa, adopted the plan with

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1. What are the qualifications required of a man who becomes mayor?
  2. What is the length of the mayor's term of office?
  3. In your city or town what public officers other than the mayor are elected directly by the people?
  4. One frequently reads of a political boss who is not an elected official. How does such a boss get his influence in a city government?
  5. What is a tidal wave?
  6. Emergencies always bring out the difficulties in any governmental plan. Show how the war has served to suggest reforms in the government of this country and other countries.
  7. What cities near your own home have the commission form of government?
  8. In the cities which are near you but do not have the commission form of government what is the organization of the city?

some new features which attracted fresh attention and helped very much to spread the scheme. These new features were meant to make sure that the all-powerful commission of five men should not forget that the government belonged to the people of the city. In the first place, the commissioners were to be chosen without the help of the political parties; neither on the primary ballot nor on that of the final election was any party name to be printed. Next, they could be removed from office by the voters at a special election called by popular petition. This is known as the recall. In the third place, their acts could be vetoed by a majority of the voters whenever a small petition asked for the opportunity. This is known as the referendum. Finally, if the commission refused to take action which the voters wanted, they could by petition put such action upon a ballot and enact it themselves at an election. This is known as the initiative. These four new features—nonpartisan elections, the recall, the referendum, and the initiative—changed the Galveston plan into the Des Moines plan.

Many who had been afraid of the great powers which Galveston had put into the hands of its small commission felt that Des Moines had made them safe and democratic. The plan made rapid progress from the Atlantic coast to the Pacific. At last many cities which had been floundering in the old confusion found themselves with a plan of government which did not, it is true, guarantee good management, for no kind of organization can do that, but it offered fresh hope and renewed courage.

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1. How does the Des Moines ballot differ from the ballot used at an ordinary election?

2. What is a primary election?

3. The use of the recall is permitted in a number of States not only for municipal officers but for other officers. Find out how the recall is operated.

4. Find out what States provide for the referendum and initiative in matters of State legislation.

5. The recall, referendum, and initiative are sometimes objected to on the ground that they make government less stable and interfere with the authority of the regular officers of the government. The whole matter is a very suitable subject for a debate.

6. Compare the number of cities where this new form of government has gone into operation with the total number of cities in the United States and in this way estimate the importance of the movement. Can the movement be estimated simply in terms of the number of cities that have tried the experiment?

## WHAT COMMISSION GOVERNMENT MEANS.

Let us see, then, just what the commission plan had done when after a dozen years some 350 cities had adopted it. Its main service had been in making city government simple and transparent. It had done this by abolishing the large councils with their aldermen chosen from small wards controlled by petty local interests and "ward politics," and had replaced them with a small council or commission, usually of five men, all chosen by the voters of the whole city. These five men acting together had been given the whole power of the city. The power to make local laws and ordinances, to levy taxes, to appropriate money, to spend it, to manage all the various branches of city work, including police, fire, health, parks and playgrounds, streets and public utilities, sewerage, water supply, usually charities and corrections, and sometimes schools. The five men had each some division of these things to look after, but always the final power was in the hands of the five together. There was no separation of powers, no check and balance system. The commission decided what to do and did it—all with the bright light of public attention on them. There were no dark corners, no hiding places.

## REFERENDUM, RECALL, AND INITIATIVE SELDOM USED.

Under the Des Moines plan the people kept the power to guide and correct this commission—to undo what should not have been done, to do what was left undone, and even to oust the commissioners if they found it necessary. But it is interesting to know that they have not found it necessary to use these powers

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1. What reasons can you give for the desire to eliminate ward politics from city government?

2. What is meant by electing officers at large? Show why officers elected at large are better for a city than officers representing a small district.

3. The text takes the position that a better grade of men can be secured to serve on commissions than can be secured under the older forms of city government. Why should this be the case?

4. What is an expert in any given line? Offer examples other than the examples given in the text with reference to city management.

5. What phases of city government can you think of which require the services of an expert?

6. What kind of mistakes would a council be likely to make if it did not get the advice of experts in managing a city?

7. An expert is generally very expensive. Does it pay to employ experts in the government of a city?



very much. Generally they have found that when their commissioners had power enough to make the position worth while, they could get good men to serve in those offices; and that with their responsibility clear and the public light bright upon them it was safe to trust them to do their best. So the club of the referendum and initiative and the rifle of the recall have stood almost all the time unused behind the door.

The Galveston flood has made its mark on American city government, not only in those hundreds of cities which had adopted the commission plan in full, but also in some hundreds of others which had not gone the whole distance, but had felt the new hope and the new impulse to simplicity and transparency.

#### DAYTON APPOINTS A CITY MANAGER.

It is a curious fact that another disaster, another flood, brought to general notice a new step forward in American city management. The city of Dayton, Ohio, in 1913 was partly overwhelmed by the Miami River, with great destruction of life and property. Like Galveston, Dayton saw the need of an able and trustworthy government to do the work of rebuilding. The citizens of Dayton knew, of course, of the commission plan; they approved it and went a courageous step further. They said:

We want the simplicity and directness of that plan, but we want also more assurance of trained men to handle our many kinds of difficult business. To divide this business up among the five commissioners who are not especially trained to these tasks, however honest and worthy

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1. Public officers are usually required to be residents of the districts from which they are elected. What are the advantages of this requirement?

2. If the city manager is brought in from some other part of the State or country, does the city lose the advantages that are sought by the general requirement that elected citizens come from the district itself?

3. In State government the effort is frequently made to introduce what is known as the short ballot. Find out what this phrase means and be prepared to show that the movement for the short ballot corresponds to the simplification of city government which has been discussed in this lesson.

4. What preparation would you regard as necessary for the heads of the various subdivisions of the city government?

5. There must be in the district in which you live, whether it be a city or town, a commissioner of highways or a corresponding officer. What are his duties? What type of training should he have?

they may be, is to keep our city business in the hands of amateurs. We want professionals. We want the best man we can get anywhere to run this city business of ours under the direction of our commission. We want an expert, even if we have to go outside of Dayton to find him. Let us do what a successful business corporation does: Get a trained manager, put him in charge, keep him as long as he does good work, and pay him enough to keep him. Let him hire the men he needs to work under him in the various divisions of the government. Let him define their duties, direct them, and remove them.

So Dayton adopted the city-manager plan which the little city of Sumter, S. C., had already in successful operation and obtained from Cincinnati a trained and tried city engineer to be its manager.

The scheme has worked. It has had the advantages of the commission plan, and it has added to it the further advantage of centering responsibility for good workmanship in a single head, trained to that task and trusted with the tools he needs. Many other cities have already adopted the plan and many more are actively considering it.

Of course we have not got perfect city government yet in any city. One reason why this can not be done suddenly in all cities is that there are not yet enough trained and skillful city managers and trained people who can be appointed heads of health departments, of parks, and police, and fire and street departments. But many cities which felt themselves in the old days of complicated and confused city government in a slough of despond now find themselves with their new and simple governments on a high road of progress. The old "reform campaigns" which aimed merely at turning the rascals out have now given way in these cities to new efforts for a more simple, direct, and intelligent way of handling city business.

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LESSON B-20. THE CHURCH AS A SOCIAL INSTITUTION.<sup>1</sup>

Sixteen years ago a French explorer dug out of the sand in a part of Mesopotamia where the British armies have recently defeated the Turks the broken parts of a great black stone which had lain buried for hundred of years. The stone was covered with writing, and when the scholars had carefully studied it they found that it was a collection of laws for the Babylonian people. There was also a picture of a king standing before the sun god and receiving from him the book of laws. This king, Hammurabi, lived nearly 4,000 years ago. From the translation of the inscriptions on this stone we know what the laws of Babylonia were at that remote time. The picture shows us the belief of the people that their god had given them their laws and that he expected them to be obedient and to do their duties.

## EARLY LAW IS BOTH CIVIL AND RELIGIOUS.

In the same way in the Old Testament there is the narrative of Moses going into the mountain to receive from God the laws which the people were to observe. No distinction was made between laws of the state and laws of God, because it was believed that God was interested in everything that interested men and that he wanted everything in the family, in the community, and in public business to be done right. For instance, there was a law that if a man should build a house with a flat roof on which people could walk he must build a parapet around the house so that nobody could fall off. There was another law that no filth should be allowed to remain about the place, and another that a certain part of every man's property must be given to help the poor. Thus the people had a very simple, common-sense religion, reaching down to the most commonplace affairs of daily life.

Some of the Hebrew teachers of religion of a period much later than Moses gave instructions about the everyday affairs of the people. There was a farmer named Amos who noticed that a great many people had not enough food, although there was plenty in the country. He looked into the matter and found that

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<sup>1</sup> This lesson was prepared by Theodore G. Soares, professor of homiletics and religious education, University of Chicago. It shows how certain needs of society which can not be met without cooperative effort and are not provided for by the civil government are met by the church. The church is one of the earliest and most active social institutions, and its influence on community life has been and is of unlimited importance.

certain people were living in luxury, eating the young lambs and the calves, and he told them plainly that their enemies would overcome them because of their injustice. He found some other people who were selling poor wheat and some storekeepers who were using false weights. He told them that God would not forgive such wickedness.

#### LAW WAS TAUGHT AS A PART OF EDUCATION.

Laws were in early days part of the regular education of children. They learned the principles of religion and at the same time the rules of daily conduct. The family, the religious life, and the government were indistinguishable. Children were educated at home and by the elders of the community in the religious ceremonies and duties, the latter including civic duties as well. We see an example of this in the beautiful picture by Hoffmann entitled "Christ before the Doctors." It represents a young Jewish boy of 12 years of age eagerly asking questions of the learned old men who had been studying the laws all their lives. This shows us the Hebrew custom that when a boy became 12 or 13 years of age he was considered old enough to take upon himself the responsibility of keeping the laws of his people. Jesus had been brought to the temple at Jerusalem for the ceremony, which is similar to that which the modern Jews observe when boys reach this age. Christians have a somewhat similar practice in connection with confirmation or joining the church.

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1. There are certain other ancient systems of laws which are mixtures of civil and religious law. Look up in the ancient histories references to Greek and Roman systems.
  2. What was the Delphic Oracle and what was its influence on the state?
  3. Find in the histories of Egypt evidence of the priests having a large influence in the affairs of government.
  4. In many European countries there is a state church to-day. Find out about this matter.
  5. What are the other great social institutions which society uses to develop and control the community?
  6. What are the devices used in present-day society to circulate the kind of warnings circulated by Amos among his people?
  7. The newspapers of the country are sometimes referred to as institutions. Is this a proper use of the term?

## THE SPECIAL RULES OF CONDUCT OF THE CHURCH.

The church as we know it is separate from the civil government. We speak of it as a special social institution. It is a community of people having the same religious faith organized for the purpose of promoting a certain type of social living. The church sets up certain principles and standards of conduct which its members are expected to observe. While it lays great emphasis upon exact obedience to the civil law, its ethical teachings go beyond what the law of the State requires. Some churches have very definite rules. There are those which refuse to permit their members to secure divorce for causes which the civil law would permit. Others require total abstinence from intoxicating liquors. Others have certain rules regarding forbidden amusements. All churches expect their members to give a portion of their income to religious and philanthropic purposes and sometimes the exact proportion is designated.

The tendency of the modern church is away from definite requirements and in the direction of greater emphasis upon high motive and a free choice of right conduct. It is recognized that the civil law can not go beyond the moral sentiment of the average citizen and can take account of little besides definite acts. But the church seeks to lead its members to go behind acts to motives, and to ask how much ought to be done and not how little must be done. The law can forbid a person's taking vengeance upon his enemy, but it can not prevent his harboring a spirit of revenge. The church seeks to teach men to forgive. The law can punish fraud and perjury, but it can not well punish ordinary falsehood. It can forbid slander, but can not always reach

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1. Give examples of the way in which modern communities instruct people in the law.
  2. "Punishment is one of the most potent means of teaching obedience to law." Show why.
  3. The law does not apply to little children in the same way that it does to adults. Why?
  4. What are some of the laws of the school which are entirely different from those of the state or church?
  5. What are some of the special laws and rules of the church?
  6. In connection with the new National Army there are various religious organizations which provide more entertainment and religious services for the men than are provided by the Army. This is institutional service. Explain the statement.

malicious insinuation. The church is concerned to teach its people that ill will is as bad as ill deeds and that no deed is good except as an outcome of good will.

#### THE CHURCH AS A SUPPLEMENT TO GOVERNMENT.

Government is constantly seeking to secure justice and equal opportunity for all, but it is very difficult in our complicated modern life. There are inevitably a great many misfortunes and unfair conditions which government is not yet able to meet. Private initiative must supplement the public organization. This gives opportunity for individual charity and for various philanthropic organizations. Among the latter is the church. Its recognition of the principle of human brotherhood leads it to endeavor to remedy the inequalities of our social life by the kindly ministries of its members. Part of its system of religious education is the training of the young people in social service. Thus in many churches baskets of good things are packed and taken by the boys and girls to families who would not otherwise have a festal Thanksgiving or Christmas dinner. Magazines are collected and carried to homes for old people. Flowers are taken from the church to the sick and to the shut-ins. Girls dress dolls and sew for orphans and for children in hospitals. Convalescent patients are taken out in wheel chairs by boys. And in these days of war there are Red Cross work and food conservation work and many plans of patriotic duty.

The adult members of the church undertake similar activities, but very much of their contribution to social betterment is the

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1. If the rules of the church are good, why should they not be turned into laws of the State?

2. Is the law of the State in any way influenced by the activities of the church?

3. "Charity is a method of redistributing the world's wealth." Show, first, some reasons why wealth needs to be redistributed, and, second, how charity does this service for society.

4. "If charity is not organized, it is likely to be unintelligent." Show some of the ways in which organized charity can be more intelligent than purely personal charity.

5. Is giving to those who beg a kindness in every case?

6. What kinds of organized charity work are going on in your community?

7. Does the school furnish an opportunity for redistributing the world's wealth?



giving of money to provide professional workers to do what is needed. Thus church representatives are stationed at Ellis Island to give help and direction to the immigrants. Others are in the juvenile court to take care of boys and girls who need friends. Others seek out friendless orphans and secure for them homes where they may be adopted. Still others organize schools in neighborhoods where there seems to be special need.

#### RELATED INSTITUTIONS.

An interesting example of the way in which the church is organized to meet social needs has appeared in connection with the war camps. The Young Men's Christian Association and the Knights of Columbus have placed in all these camps wooden buildings which they call "huts," where the soldiers and the sailors can go to get warm, to find writing materials, and to spend their evenings in healthy entertainment. The church has raised \$50,000,000 to provide these huts and to employ the secretaries.

#### MISSIONARY ENTERPRISES.

The church does not confine its operations to our own country, but endeavors to supply any need that may appear in any part of the world. Thus the Jews in the synagogues of America have been raising large sums of money for their countrymen in Palestine who have been driven from their homes by the Turks. In the same way the churches have raised money for the Armenians and the Syrians.

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1. Social institutions supported by the State are paid for by taxation. What is the difference between taxation and contributions made to other types of social institutions?

2. In the example of Ellis Island we see cooperation between the church and the Government. Explain why such cooperation is desirable. Are there similar examples to be found in your community?

3. Higher education in this country was organized through the church and is to-day largely supported by churches. Why should colleges be different in this respect from common schools?

4. What is the institution which ordinarily takes care of children but for which society must find a substitute in the case of orphans?

5. What does our Government do to protect missionaries who go to other countries?

6. What does the Government of the United States do, besides protect missionaries, to help other countries, as, for example, in China and Liberia?

Many countries are backward in the development of medical science. The church very often supplies doctors for needy communities. A peculiarly interesting instance of this enterprise is the adventurous work of Dr. Grenfell among the fishermen of Labrador. He travels hundreds of miles over the ice and snow visiting the sick in that far-away land. Every few years he returns to the American churches to procure more money for his hospital and medicines.

The church has many thousands of medical and other missionaries, sisters of mercy, deaconesses, and philanthropic experts who give their time to various activities for making the world a better place for many people to live in. Millions of dollars have to be raised for these enterprises; so the church undertakes to secure from its members the necessary funds.

#### SPECIALIZATION OF INSTITUTIONS.

The descriptions of the activities of the church show what is meant by the statement that the church is a special social institution. It is an organization which does an important service for social life. The Government is another organized agency for taking care of many of society's needs. But the Government does not do everything. In our complex modern life there is a clearly drawn distinction between what the church does and what the civil government undertakes. The rules of life and the activities of society were in earlier centuries united, so that religion and civil law and personal morality were all dealt with through the single social organization which included every interest. To-day there is one type of organization for civic matters, another for religious, and many other organizations such as the family and

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1. Look up the work of Dr. Grenfell and report on the conditions in the country where he works.
  2. Why did Livingston undertake the exploration of Africa?
  3. Have explorers always been missionaries?
  4. There are medical institutions in our own country as well as abroad which are maintained by charitable organizations. Find out about some of these.
  5. Why is life to-day to be described as more complex than in former times?
  6. What is the difference between a modern Sunday school and the Sunday school of Puritan times?
  7. In our country the decision was reached long ago that the public schools should not teach religion. Can you tell why this decision is wise?

voluntary associations of various kinds which hold the community together and work out its various interests.

#### RELATION OF CHURCH TO EDUCATION.

There is one very striking characteristic of the church as an institution which distinguishes it from the civil government. The church aims to enforce its principles of conduct chiefly through education. The church has always been and is to-day one of society's chief educational agencies.

The public school is a social institution which the community has organized for the purpose of training citizens. The church has always had close relations with this other educational institution, the school. Both the school and the church teach us that we are all members of a great human society and that each one of us must do his part to make the society prosper. So the public school gives us lessons that help us to be intelligent, alert, faithful, honorable, truthful, useful, and helpful one to another. The church tells us that God is a member of our society, that He is the head, the great father of all. God is trying to make a good world and He needs the help of all good people to make it. The church teaches us how we may work with God to make the world the best kind of place for men to live in.

The material of instruction which the church employs is principally the Bible, the story of religious men and women, the history of the church and of the various religious enterprises. In addition to these, certain simple statements of doctrine are sometimes taught in the form of catechisms. The reason that so much attention is given to the Bible is that it is the great book of religion. It contains many stories of noble lives, many of the greatest expressions of ethical purpose, and many of the finest moral precepts.

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1. Ceremonies are not confined to the church alone, but are frequently organized as a means of making a more striking impression on the public. Give examples.

2. What other types of buildings are planned for the purpose of impressing those who enter?

3. Is the erection of a great corridor in a public building a legitimate way of spending public money?

4. What are mural decorations and where are they to be found?

5. Music has developed largely in connection with religious ceremonials. Can you find out something about music as used by savages and as it was refined in earlier years of church history?

6. Music is used wherever large groups of people are to be influenced to act together. Give examples other than the example of church music.

The purpose of these lessons is not so much to teach the stories of the past as to help people by the noble examples of the past to meet the practical problems of life to-day.

#### WORSHIP AS A FORM OF INSTITUTIONAL LIFE.

One of the most powerful means employed by the church to make its teaching effective is public worship. The solemnity and inspiration of a religious service are calculated to make the worshiper feel very strongly the obligation of a religious life. The worshiper is led to good deeds by the religious motives which are aroused within him. In order that the conditions of worship may be as impressive as possible, the church has adopted certain forms and ceremonies, and it has given these suitable settings in buildings of great stateliness. The most beautiful buildings that have ever been erected have been designed for the worship of God. Man has always felt that there could be no place too good for him to find the divine help which enables him to live his human life, to meet his troubles, and to be cheered by the friendship of God. Sometimes, of course, the house of worship has to be simple and inexpensive, because the congregation is not able to provide a better one. In that case the worshipers feel that the sincerity of their prayer and praise makes even the common little building the house of God.

The church in its worship has certain sacred ceremonials which it has observed for hundreds of years. It has also beautiful hymns and noble music that inspire people as they sing or listen. It has sacred scriptures and prayers that have become dear to its people by long use. It has also certain holy days in the year which it observes with great solemnity and joy. Some of these are also public holidays, like Christmas and Thanksgiving. All these ceremonies, like the material grandeur of the church building, are devices which promote the fundamental purpose of the institution, which is the cultivation of the highest and purest motives of good living.

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## Chapter VI.

### BUSINESS ORGANIZATION AND NATIONAL STANDARDS.

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Other matters in which the National Government is concerned are taken up in this chapter. The people of the American Colonies suffered great inconvenience because of the differences in the standards of currency, weights, and measures that prevailed in the several Colonies, and the need of uniformity was keenly felt. The Articles of Confederation, framed in 1777, the year after the Declaration of Independence, formed but a loose bond of union, for the States were loath to transfer their prerogatives to the Central Government; nevertheless, it was provided that "The United States in Congress assembled shall have the sole and exclusive right and power of regulating the alloy and value of coin struck by their own authority, or by that of the respective States—fixing the standard of weights and measures throughout the United States."

The Constitution followed the Articles of Confederation in this particular; but the Congress has not fully taken advantage of the power thus given. A set of standard weights and measures is supplied to each State, and certain electrical units have been prescribed, but no provision has been made for enforcing the few standards fixed. The State legislatures have gone a great deal further, and naturally there is considerable variation in the laws. The value of the work of the National Bureau of Standards is recognized, however, and its conclusions are generally accepted by common consent even when they have not the force of law. This bureau is an example of Government activities whose work is purely scientific and at the same time is closely related to the life of the people.

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#### LESSON B-21. NATIONAL STANDARDS AND THE BUREAU OF STANDARDS.

Prepared from material supplied by E. B. Rosa, chief physicist, United States Bureau of Standards, and H. G. Moulton, assistant professor in political economy, University of Chicago.

Henry I, King of England from 1100 to 1135 A. D., is said to have established the yard to be used in all measuring in his domain as the distance from the point of his nose to the end of his thumb. Later monarchs of England established other standards. Henry VII had a measure made in 1490. Queen Elizabeth had a measure made in 1588. These two are said to differ from the present Imperial British yard by about a hundredth of an inch. The present English standard was adopted in 1855.

Copies of English standard yards were brought to this country during colonial days. In 1856 the English Government sent to this country two certified copies of the new English standard. One is made of bronze, the other of iron. These served as standards until 1875, when our Government joined with several others

to establish a central bureau of measures and weights in Paris. From this international bureau our Government received standards which are made of platinum. These are carefully guarded at the Bureau of Standards in Washington and are the standards from which all our weights and measures are derived. It is interesting to know that these standards are in the metric units, our own English measures being derived from the metric units in a ratio fixed by law.

#### EARLY STANDARDS.

The question suggested by these statements is this: Why should it take so much effort and so much time to get people to see the necessity of adopting satisfactory standards? The answer can be found by studying history. There is nothing in nature which men can easily use that is absolutely uniform. They began by using parts of the human body. For example, it will be found that in Deuteronomy II, 5, reference is made to "a foot breadth." The cubit often referred to in the Bible was the distance from the elbow to the end of the middle finger. For longer distances a stone's throw or a day's journey was used. All these early measures were indefinite and variable. One can imagine the disputes that must have arisen when people tried to measure by these crude standards.

The following description of the way in which a definite measure was obtained in the sixteenth century is found in one of the books on surveying:

To find the length of a rood in the right and lawful way, and according to scientific usage, you should do as follows: Stand at the door of a

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1. In measuring land the term "pace" is sometimes used. How long is a pace? What mistakes does anyone make who uses this kind of measurement?

2. There are many common methods of measurements used in practical life which employ parts of the body as standards. Find out about some of these.

3. What is the source of the unit in the metric system? Show the advantage of securing the unit in this way as over against the older method which lies at the foundation of the English system.

4. It has been suggested that the length of light vibrations be taken as the fundamental unit of distance measurements. What would be the advantages of such a unit?

5. What is the source of the units of volume and weight?



church on a Sunday, and bid 16 men to stop, tall ones and small ones; as they happen to pass out when the service is finished; then make them put their left feet one behind the other and the length thus obtained shall be a right and lawful rood to measure and survey land with, and the sixteenth part of it shall be a right and lawful foot.

This account shows one way in which it was supposed to be possible to get away from the use of any particular human foot and to get a fair average of the feet of many people.

Standard weights were obtained with even greater difficulties than measures of distance. Stones and grains and other measures were used. None of these were easily copied. Grains, in spite of the fact that they were much alike, differed somewhat in weight, and this difference was often a matter of importance in weighing valuable materials like gold. It was not until the common use of metals made it possible to duplicate weights freely that a system could be worked out such as we use now. Our weights are copies of standard weights kept by the Government.

There are other standards, namely, those of volume and of value. Money is an important standard in our modern life. It also is under the control of the Government. Money standards grew gradually from trade in unmarked gold bars and other desired metals.

#### THE GOVERNMENT MUST SUPERVISE STANDARDS.

The one fact which stands out clearly in all this history is that standards are never fully established until the Government takes a hand in the matter. Individual traders are likely to be selfish

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1. The English standards of measure were destroyed early in the last century. How would a country go about reestablishing its standard if the originals were destroyed by fire, as were those of England?

2. What precautions are taken by society to compel traders to use standard weights and measures?

3. What is the meaning of the statement that money is a standard of value? In some studies of commerce it is found better to use wheat as a standard. Can you explain the reason why?

4. Why should the National Government be put in charge of weights and measures and coins rather than the government of small communities?

5. Find out from some history what was the situation in this country at the time that the Constitution was adopted with regard to weights and measures.

6. Make a list of the ways in which some tradesman, such as a carpenter, makes use of various national standards.

and to try to gain advantages for themselves by adopting weights and measures that favor their side of the bargain. The Government, which is above the individual and which is not working for any particular citizen, finally steps in and sets the standard.

It is this reason which explains why the Constitution of the United States provides that Congress shall have power "to coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures." There is, perhaps, no single power of our National Government which brings it into so intimate daily contact with the life of the people as this power of fixing the standards of measurement. Anyone who buys a yard of cloth or a pint of milk, anyone who pays for the necessities or luxuries of life in coin carrying the Government stamp is using a public standard of measures established by our National Government. Not only so, but the Government is prepared to enforce its standards, so that no one may reduce or increase the measures established.

- The result is that everybody does his private calculating as well as his dealing with his neighbors in the standards set up by the Government. When a man wants to know how much wheat he has, he measures it in bushels. The engineer who wants to calculate the amount of water flowing in a stream uses the gallon as his unit. The merchant thinks of the value of his stock in terms of the dollar, and the housewife who plans her purchases and her recipes for cooking thinks in terms of Government-made money and Government-established weights and measures.

#### STANDARDS OF LIGHT AND OF GAS.

These measures, however, are by no means enough to satisfy the needs of modern life. With the increase in the number of

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1. Show the advantages of the metric system of weights and measures for purposes of calculation.
  2. This system of weights and measures is legalized in the United States by act of Congress. Why do people not make use of it more generally in ordinary life?
  3. Where is the system employed in this country?
  4. It is found that the transfer of American machinery to France for the Army of the United States is involved in serious difficulties because of the difference in standards of measure. Point out some of the difficulties which would arise.
  5. What is meant by a standard-gauge railway? What are the advantages of such a standard gauge?

things which can be bought in our day, there comes a new demand for standards. For example, many people buy light from a company which furnishes electricity and incandescent lamps. The person who buys light has a right to light which is steady and strong. The light is not satisfactory unless there is a steady current. If the current is not strong enough, or if there are too many people using it, there may be a flicker, which is disagreeable and injurious to persons using the light. Suppose there is one customer who suddenly turns on or off a great deal of current. His use may interfere with all the lights in the neighborhood. Whoever uses electric lights has a right to a proper quantity of current for his lights and a steady current at all times. This statement at once raises the questions: What is a strong light and what is a steady current? To answer these questions there must be added to standards of length and weight standards of light and electric current.

Another illustration can be found if we consider the case of a gas company which manufactures and distributes gas for heat, light, and power. The kind of service obtained in the domestic use of gas, such as cooking over top burners or in ovens, or in an open flame for lighting or in a mantle lamp, depends on the quality and pressure of the gas. If the quality varies greatly, the burners may flash back; and if the pressure drops too low, the flame may go out entirely. If this happens the escaping gas may cause a fire, an explosion, or asphyxiation.

In the second place, the value of the gas for heating or for giving light depends on the chemicals of which it is made. It is very undesirable to have in gas large quantities of any impurities, such as the very common substance called hydrogen sulphide.

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1. The earlier standard used in measuring light was candlepower. What kind of candle is referred to in this standard?
  2. How are lights compared with each other?
  3. What are the different standards for thermometers? Why was the freezing point in the Fahrenheit thermometer set at 32 degrees?
  4. How do manufacturers of thermometers standardize the thermometers they make?
  5. What are some of the units used in measuring electric currents?
  6. How strong is the current usually supplied in an ordinary city current?
  7. How strong is the current used in a trolley system?
  8. Warnings are sometimes given in connection with strong power currents that they are extremely dangerous. How much electricity will kill a man if it passes through his body?

The heating value of gas per cubic foot is the best single measure of its usefulness, and this is tested by scientific methods of a very exact kind. The candlepower or amount of light given by an open flame is less important, and although it has for many years been used as a standard in measuring the quality of gas, it is not a good standard, and very few cities at present prescribe it.

#### PUBLIC UTILITIES.

Gas and electricity are commonly supplied to cities and towns by companies known as public-utility companies. The question whether such companies do their work satisfactorily can not be answered by measuring results with an ordinary measuring rod or an ordinary scale. Modern men of science have therefore set about making for us a new set of standards of measurement. These are exact measures of the purity of the gas supplied or the constancy of the current, and also measures of the results secured, such as the amount of heat, light, and power produced.

Here, again, as in the earlier case of standards of length and weight, there will be final agreement only when the Government takes charge of the matter. Our National Government, acting under the authority of the Constitution quoted in an earlier paragraph, has provided in Washington a great Bureau of Standards, established in 1901, which is studying all these problems and is giving to the country standards of a great many different kinds.

When one now wishes to find out whether a light is of a given strength one can get from the Bureau of Standards a lamp which has been tested and will give a certain strength of light when supplied with a certain definite amount of current. The name used for this standard of lighting is candlepower. Formerly the

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1. When gas is used for heating or cooking it is commonly passed through a certain type of burner. Describe this burner and tell why it is used.

2. What is the difference between natural gas and manufactured gas in regard to their qualities and values for heating and lighting?

3. What are the different methods of manufacturing gas?

4. What are the other products which come from a city gas factory?

5. The method of measuring the quality of gas is to burn it in a calorimeter. Get a description of a calorimeter and its method of use.

6. The Department of Agriculture has set up certain standards for cotton and wheat and other agricultural products. Show why it is desirable that a Government department should set up such standards.

7. A trade-mark is frequently referred to as a guarantee of quality. What does this statement mean?

light given by a single candle was, like the length of the human foot, a rough and useful measure. But science and the Bureau of Standards have supplied an exact measure of light. This bureau also tests thermometers, in this way giving to the people of the country standards of temperature. It tests the quality and strength of different materials, such as building materials and chemicals.

From these examples it will be seen that the meaning of the word standards is interpreted by the bureau in the broadest possible way. There are standards of measurement of size and quantity; standards of quality—that is, standards dealing with the properties of materials; standards of performance—that is, standards for determining the accuracy and power of instruments and machines; and standards of practice, such as standards of service rendered by public-utility companies. The Bureau of Standards is concerned with all these different kinds of standards, and has a large scientific and engineering staff engaged in many lines of investigation for the Federal and State Governments, municipalities, and the general public.

#### PUBLIC-UTILITY STANDARDS.

Passing over the other activities of the bureau, our attention may be concentrated on the work which it does with public utilities. This name, as was pointed out, applies to certain companies which furnish the public with electricity, gas, water, or transportation, as a street car company, for example.

A public-utility company gets a franchise from the city, that is, it gets the right to supply the electricity, gas, or transportation for a certain period at a certain rate. Many questions arise in

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1. Make a list of all the public utilities in your community.
  2. A public-utility company differs from an ordinary commercial company in the fact that it is not obliged to set its rates through competition. Show how this fact may be turned either to the advantage or disadvantage of the public which depends upon this company.
  3. What would happen if there were no laws regulating the rates imposed by public-utility companies?
  4. What happens when two public-utility companies are allowed to operate in the same territory, as, for example, two telephone companies?
  5. "A well-managed and well-regulated public utility is virtually a copartnership between the public-utility company and the community in which it operates." Show what is meant by this statement and discuss the way in which the two parties involved in this partnership may most advantageously help each other.

connection with the service of such a company which can be answered only by long and difficult scientific studies. The Bureau of Standards has undertaken many such studies. Thus at first the question studied were the testing of electric and gas meters and instruments; testing standard lamps used in measuring the candlepower of gas and of electric lights; investigating and testing devices for determining the heating value of gas; and studying the effect of atmospheric pressure and temperature upon the candlepower of gas lamps. Later, a thorough study was made of the conditions under which the methods of measuring could be used in practical ways. This was followed by a thorough study of rules and regulations which should be adopted for the various utilities. In all these studies the public-utility companies were fully consulted, and, indeed, the work was in reality a joint investigation by the utilities, the local authorities, and the Bureau of Standards.

The bureau can not force any community to adopt its recommendations. It can, however, make so clear a scientific statement of the case that everybody concerned will see the wisdom of following its suggestion. A few examples will show the kind of work it does.

#### ELECTROLYSIS.

One of the problems in communities which have electric street cars is the electrolysis problem. Electric street railways are usually operated by current supplied by overhead trolley wires. The current flows from these overhead wires through the trolley into the motors of the cars and out through the wheels into the tracks and thence back by way of the rails and earth to the power station from which it came. The current flowing through the

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1. What are some of the requirements that may properly be made of a company that supplies water to the city?

2. Transportation is difficult to standardize because the requirements can not be exactly defined. Show what is meant by this statement.

3. Why are gas meters and electric meters used to measure the supply consumed in a house? Why should it be necessary to test these meters?

4. Water meters are sometimes used and sometimes not. Explain the difference between this situation and the one referred to in the last question.

5. The brief statement in the text with regard to a number of matters that need to be measured should be expanded. Thus, show why atmospheric pressure will affect the candlepower of gas lamps.

6. Every municipality has rules with regard to electric wiring. Why are such rules necessary? Show that the expense of installing an electric system is affected by these rules.



earth sometimes causes corrosion of gas and water pipes, and the lead sheathing of telephone and other cables. Such corrosion causes serious expense for repairs and sometimes causes interruption of service or even explosions due to gas leaks. Controversies in court as to the responsibility for such damage sometimes use up a large amount of money without repairing the damage. The Bureau of Standards has sent experts to places where such difficulties have arisen who find out the reason why pipes are injured. The reason often is that the electric current is badly distributed in different parts of the street-car system. Sometimes a change can be made which helps not only to stop the corroding of the pipes but saves the street-car company a great deal of expense in the better distribution and use of its current. Scientific studies in this way help all parties and the difficulty is removed. The Government, by contributing the scientific methods, renders a large service to the community.

This may not seem at first sight to be a matter of standards, but it is. The service rendered by the electric car line is unsatisfactory just in the degree in which it destroys the property of the city or of the gas or water works. Furthermore, by the use of their measuring instruments the scientists and engineers of the bureau can find where the difficulty lies and can suggest where improvements should be made.

#### COOPERATIVE DEVELOPMENT OF SAFETY CODES.

The National Electrical Safety Code is another example of the value of working together under the leadership of a Federal bureau to develop a set of standards for nation-wide use. The

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1. The electrolysis problem was not understood when trolley cars were first brought into use. Indeed, it is not fully understood at the present time. Is it right for a community to throw the responsibility on a trolley company for the damage done to the water and gas pipes in the city streets? If the trolley company is not to be held responsible, is it just to the water and gas companies to allow their pipes to be injured? What is the responsibility of the community as a whole in such a case and how shall matters be arranged so as to place the responsibility where it really belongs?

2. When a community increases in size the public utility companies get advantages from the growth of the community. Who has a right to the profits which result from this growth?

3. Show how the Government can bring to the services of a city higher grade scientific experts than the city itself could employ in solving its problems.

safety code is a set of rules about where wires can be run and how they should be supported or insulated. Our city streets and country highways are covered by a network of wires carrying in many cases high-voltage currents of electricity. Safety requires that these wires be very carefully arranged and insulated. A safety code made out by the Bureau of Standards is much fairer to everybody than a set of rules made out either by a single company or by some town official who knew very little about electric currents.

The problem is a national one. If a hundred million people are to live and move under a network of electric wires and are to carry on hundreds of operations by means of electrical machines and other electric devices, such as the telephone, it is very important to have standards of construction and operation that are safe and reasonable. These must be kept up to date and must be enforced by all local agencies. The work of the Bureau of Standards in this connection is of far-reaching importance and is rapidly being recognized and adopted by State commissions, municipalities, and insurance companies, as well as by electrical utility companies and other electrical interests.

#### CONSERVATION OF NATURAL RESOURCES.

There are many other questions in connection with the operation of street railways, gas, electric light and power companies, telephone and telegraph companies, and other public utilities that can be studied profitably. One of these is the question of fuel supply, and the conservation of our natural resources. The greater use of water power and the electrical transmission of energy will save our diminishing coal supply. There has some-

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1. What are some of the laws passed by communities to protect citizens from danger by fire?

2. In addition to the laws passed by the community, public warnings are frequently given of dangers which citizens must avoid for themselves. Would it be better to have more numerous laws than to depend upon people to take care of themselves? Many of the European cities have very much more detailed safety ordinances than we have in this country. Discuss the two ways of securing safety and decide which is better.

3. Show why safety rules can not be left purely to selfish interests.

4. If a person is injured, show how the community is concerned with his condition and how his injury is a public waste.

5. What is the danger to a telephone system from high-power electric wires in the city streets or on the country roads?

times been opposition to the development of water power by private companies because of the belief that such companies would not serve the public well. It is feared that the company will charge too high a rate or possibly furnish poor service. The cure for this fear that the company will not serve the public well should not be sought in preventing the company from doing anything. It is far wiser to let the company use the water power, but by the application of scientific methods make sure that it does its work well. The rate charged can also be determined with justice to all parties if the facts with regard to costs and with regard to quality of service are defined in an exact way. The advantage of such exact treatment of the cases through an established Government bureau is evident.

#### STANDARDS OF RATES AND SERVICE.

The people of this country pay about \$2,000,000,000 annually for the service of the various public utilities, and this sum is increasing every year. Their intelligent and adequate public regulation is of vital importance, if they are to give efficient and satisfactory service, and at the same time have justice done to their managers and stockholders. Many people believe that thoroughly successful regulation is impossible and that public ownership will be the final result. Whether publicly or privately owned or operated, all utilities should be required to comply with proper standards of service and safety, and the communities should pay just rates for the service rendered. In fixing and maintaining such standards and rates there should be available the results of the most competent scientific and engineering investigations as well as of practical experience. The results of such investigations

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1. Who knows the power that can be secured by damming up a stream?

2. Review the earlier lesson in which the relation of the Department of the Interior to water power was discussed.

3. Review the earlier discussions which show that the Government has recently taken a hand in the control of the food supply, showing the relation of food supply to other natural resources and to the demand for expert study of the way in which the community should deal with its resources.

4. Higher institutions of education which are supported by State governments carry on a great deal of scientific work. Show how this scientific work is related to the needs of the community, giving instances if you can of benefits that have come to the community from scientific investigations in universities.

and of experience can best be collected by an unbiased national agency, with the cooperation of all the interests concerned. The results obtained to date by the Bureau of Standards indicate the usefulness and value of such work, and if it were extended in scope and increased in magnitude in proportion to the importance and magnitude of public-utility service as a whole, the results would be a great saving to the people and a vast improvement in service.

But this is not all. The successful control and regulation of public utilities has a powerful influence for good upon government, both State and municipal. The corrupting influence of public utilities on municipal government which has sometimes appeared is to be explained largely by the fact that there was no means available for exercising intelligently the power given by State legislatures to city governments. It was not possible to find out whether service was up to standard because there was no standard. For the same reason no one knew whether fair rates were being charged. The most effective way to secure wise and efficient administration for a city is to secure by scientific studies the information needed by city officials in the discharge of their duties, and to give this information to the public in order that it may form a correct public opinion. If standards for satisfactory and efficient public-utility service are fully worked out, scientifically and cooperatively, and made available to all, a long step will be taken toward solving one of the most important present-day problems, namely, the provision for cities, and in large measure for rural districts also, of safe, adequate, and efficient public-utility service.

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1. What advantages come to the community from free public schools?
  2. In every European country high-school education can be had only by those who are able to pay tuition. Is it right in American communities for students to receive free higher education, especially when many children do not have the opportunity of going to the high school?
  3. Ought communities to extend the public education system by supplying books, pencils, and other materials to all of the pupils? This is done in certain communities of the United States at the present time. In others it is not. Which communities are right?
  4. What is meant by corrupting influences in public life?
  5. What kind of education of the people will counteract these corrupting influences?
  6. Show how the building of a bad road by public officials can be checked through the use of scientific standards and scientific methods. Also show how the use of these scientific methods will be most effective in the hands of a bureau of the Government.

## MONEY AS A STANDARD.

One of the most important of all Government standards remains to be studied, namely, the money standard. As everyone knows, we measure the value of everything we buy and sell in terms of a unit which we call the dollar. Thus, we speak of the price of wheat as \$2 a bushel, or the price of an automobile as \$2,000, or the price of admission to an entertainment as a half dollar or 50 cents. We shall see that a measure of this kind is of the very greatest service.

## MONEY AS A MEANS OF GUIDING EXPENDITURE.

For instance, every family which is not possessed of great wealth has the problem of making its income pay for the needs of a comfortable family life. Food, shelter, and clothing are absolutely necessary and will be provided for first. After these expenses are met, there is usually something left for other purposes. Then a real problem arises as to how the remaining funds shall be used. Something ought to be saved. How much? Enough to provide for a rainy day and to take care of old age. We reckon in terms of dollars how much shall be saved for these purposes, and then each year we must lay aside enough dollars to enable us to accumulate the fund regarded necessary.

Other questions such as these also arise: Shall we buy a chair or a picture? Shall we go to the theater or spend a week end at some pleasure resort? One tries to compare the amount of pleasure to be derived in these various ways with the cost of each. The dollar unit of measurement therefore becomes the means which guides us in the spending of our incomes.

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1. Show how money can be used as a measure of work.
  2. Does the value of work depend on the amount of strength which is required? In answering this question show what is meant by the value of work and again illustrate the importance of money as a standard for measuring value.
  3. Give some examples of the way in which a community is called upon to decide between various kinds of supplies that would be useful, but of which only a limited number can be actually secured.
  4. Give examples in family and personal life of the same necessity of choice.
  5. Are these examples given in the last two cases problems in the distribution of money or problems in the distribution of supplies?
  6. Draw a distinction between money and goods needed for personal and family and community use.

## MONEY IN BUSINESS CALCULATIONS.

The business man also uses the dollar unit in all of his business operations. He wants to produce goods as cheaply as possible. He therefore keeps accounts which show what it costs to buy raw materials, what it costs to manufacture them, and what it costs to sell the finished product. He keeps these accounts in terms of dollars. Now, there are different kinds of raw materials that he might use, there are different methods of manufacture, and there are different ways of selling goods. Which shall he use? He decides in each case according to the cost in dollars. Without a dollar unit for measuring costs he would have no accurate way of knowing which method is best. He would therefore be an inefficient business man. Moreover, because all business men would be similarly handicapped if we had no dollar unit, inefficient methods of production would be the rule. As a result, we would all have to pay more money for the goods we buy.

The dollar unit performs a similar service in all other lines of business—farming, retailing, wholesaling, mining, shipbuilding, carpentering, etc.—quite as well as in manufacturing.

## BEFORE THERE WERE STANDARDS.

We know that the Government has found it necessary to regulate the various weights and measures in order to insure a uni-

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1. In connection with our money system consider once more the advantages of the metric system in calculations. Show some of the difficulties which are encountered in business calculations because the money system has a decimal unit while our systems of weights and measures do not.

2. Business concerns commonly take a periodic inventory. Why do they do this?

3. A yearly account is commonly kept in public and private business. Why is it desirable that accounts should be closed annually at a definite time in the year?

4. What is the fiscal year of the United States Government?

3. It has been shown by students of agriculture that it is advantageous for a farmer to keep definite accounts showing the cost of feeding his cows and the income from the sale of milk. Show why a balancing of these two sets of accounts is important to the farmer.

6. If it is important for business of all kinds that definite accounts be kept, explain why these accounts are so seldom kept by small concerns.

7. Show that accounts are more essential in large businesses than in small.



form unit. The necessity for definite and unchanging units of money may best be understood by a statement of some of the troubles that arise when a currency is not uniform. Macaulay tells us that:

In the autumn of 1695 it could hardly be said that England possessed, for practical purposes, any measure of value. It was a mere chance whether what was called a shilling was really 10 pence, 6 pence, or a groat. The results of some experiments that were tried at that time deserve to be mentioned. \* \* \* Three eminent London goldsmiths were invited to send £100 each in current silver to be tried by the balance. The £300 ought to have weighed almost 1,200 ounces. The actual weight proved to be 624 ounces. The same test was applied in various parts of the Kingdom with practically everywhere similar results. \* \* \* The evil was felt daily and hourly in almost every place and by almost every class, in the dairy and on the threshing floor, by the anvil and by the loom, on the billows of the ocean and in the depths of the mine. Nothing could be purchased without a dispute. Over every counter there was wrangling from morning to night. The workman and his employer had a quarrel as regularly as the Saturday came around. On a fair day or a market day the clamors, the reproaches, the curses, were incessant; and it was well if no booth was overturned and no head broken. No merchant could contract to deliver goods without making some stipulation about the quality of the coin in which he was to be paid. Even men of business were often bewildered by the confusion into which all pecuniary transactions were thrown. \* \* \*

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1. What were the political conditions at the time of which Macaulay writes in the paragraph quoted?

2. Why should England at that period have been without standards?

3. Do you know of any modern disputes which, like those described by Macaulay, arise out of an absence of definite standards of measure?

4. Point out some of the advantages that the precious metals have over the other articles that have been used in earlier times for money.

5. What are the world's sources of supply for gold at the present time?

6. From time to time anxiety has arisen in this country because of shipments of gold out of the country and because of large shipments of gold brought to this country. Explain the reason for this anxiety.

7. If the Government coins gold without expense to the owner how is the cost met?

8. In the same way, how is the cost met for the printing of paper money? Should these expenses not be charged to the people who own the metal or who first receive the paper money?

9. Look up the history of the American standard of money, namely, the dollar, and find out where this standard came from.

The price of the necessities of life, of shoes, of ale, of oatmeal, rose fast. The laborer found that the bit of metal which, when he received it, was called a shilling, would hardly, when he wanted to purchase a pot of beer or a loaf of rye bread, go as far as 6 pence.

#### VARIOUS TYPES OF MONEY.

There is a long history back of our present money system. Various commodities have served as money at different times and at different places. For instance, furs, tobacco, leather, and wampum have all been used as money. The great difficulty with each of these forms of money was that the units were not uniform in size or quality, and hence caused the kind of trouble which was described in the preceding paragraph.

Finally, gold and silver were adopted as money by all of the leading countries, and at the present time nearly the whole world uses gold alone as the basis of its monetary system. The reason for the adoption of gold as the standard money is that it is what is called a homogeneous metal; that is, every part is like every other part and when it is coined into pieces of a definite weight all coins are exactly alike.

#### MONEY AND THE GOVERNMENT.

There are two interesting facts about the money standard which we must clearly understand. First, our Government can not control the real value of gold; that is, its power to buy other things. If the amount of gold is increased, the power of any single dollar of it to purchase other commodities becomes less than it was before. All the Government can do is to guarantee that a coin is of a certain definite weight and a certain degree of purity. It provides that 25.8 grains of gold shall be a dollar and that this gold shall be nine-tenths pure. The Government no more regulates the value of gold when it prescribes the number of grains that shall constitute a dollar than it fixes the value of wheat when it says that there shall be 60 pounds in a bushel.

In the second place, the Government does not own the metal which it coins. Anybody who owns gold bullion may take it to the United States mints and the Government will coin it into gold coins for him. The Government performs this service free of charge, and hence we have what is called gratuitous coinage. The individual who took the gold to the mint is the owner of this money. The Government is merely acting as his agent and supervises the coinage process.

LESSON B-22. FINANCING THE WAR.<sup>1</sup>

The National Government has to have money to carry on its work. In 1913, out of about 35 billion dollars spent by the people of the United States, more than 3 billions were spent for the purposes of National, State, or local government. The National Government used about one-third of this 3 billions to pay the salaries of Congressmen, judges, and other employees, for the wages, equipment, and supplies of its soldiers and workmen, for pensions, and for public improvements, etc.

Now that we are at war the National Government needs not one, but many billions of dollars. The task of paying for the war is an enormous one. The expenses of our Government are increased because of the necessity of assisting our allies in the struggle. For the 12 months ending June 30, 1918, Congress was obliged to appropriate, instead of the ordinary amounts of money, nearly twice as much to carry on its usual activities. This part of the Government's expenses will amount to \$1,977,210,200. A second set of war appropriations brought the total up to \$18,879,177,015. In addition to these vast sums of money, contracts were authorized calling for \$2,511,553,925 more, the larger part of it to be expended during this fiscal year which extends up to July 1, 1918. Thus the total of appropriations and authorized contracts for 1917-18 is \$21,390,730,940. This includes whatever sum up to 7 billions is needed by our allies. A part of the money called for, especially that set aside for the allies, may not be spent, but it is likely that further appropriations made before the end of the year will more than offset any sums not spent out of the appropriations made. If the war continues beyond the year, the sums called for each year are likely to be larger rather than smaller than those appropriated this year. It has been said that "three things are necessary in carrying on war—money, more money, and still more money."

WARS ARE WAGED WITH GOODS AND MEN, NOT MONEY.

Because the operations of the Government, like those of the business world, are carried on by the expenditure of money, our

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<sup>1</sup> This lesson was prepared by Harry A. Millis, associate professor of political economy, University of Chicago. It aims to show that money is merely a means of procuring what is needed. It is not in itself sufficient. The Government requires men and supplies. These can not be provided without genuine sacrifices on the part of the people of the country.

attention is likely to be caught by the vast sums of money voted by Congress for war expenditures. However, money is only something to be used to help carry on the war. The real problem is to provide the things needed for the war and the services of people which will be paid for with money. Money is needed only because it is the means of carrying on the real business of the Government. The real business of the Government is to get men to serve as soldiers and sailors and to secure the production of airplanes costing hundreds of millions of dollars; of merchant ships costing well on to 2 billions; of fortifications, guns, shells, and the like costing more than 2 billions; of 350 million dollars' worth of clothing for the Army, and still more for the other branches of the service. It is the business of the Government to provide much more food than we need, so that our allies may be fed; to assist in clothing, feeding, and housing persons dependent upon those at the front at a cost of 176 millions; and to do other things on a corresponding scale. The big problem of financing a war is that of getting these things. To get these things the Government must have money, for it must pay as any business concern would for the things it buys.

#### PROVIDING WAR MATERIALS WILL REDUCE ORDINARY SUPPLIES.

It is important for us to note that within 12 months we must produce most of the things needed this year. Few of them are in existence, ready for purchase by the Government. The ships, the airplanes, the food, the clothing, must be produced in 1917-18. They can not be produced in 1930 and 1950 if they are to be used now. We must provide them now, our children and our grandchildren can not provide them for us. If we are to have food, clothing, and war goods we must either produce them in addition to our usual products, or we must produce a smaller quantity of

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1. What are some of the largest expenditures of the State government?
  2. What are some of the expenditures made in peace times by the National Government for national improvements?
  3. When a war begins does the appropriation of money bring supplies?
  4. This war is on such a large scale that the problem has been unusually difficult. Find out from histories how large the armies were in the Revolutionary War, in the Civil War, and in the Spanish War.
  5. What does it cost to equip a single soldier?
  6. What does a machine gun cost?
  7. What does a battleship cost?
  8. By way of comparison find out what an office building or a school-house costs.

our usual products and devote ourselves to the war needs, or we must use up what we should at other times set aside for future use. We must raise more food and manufacture more goods, in spite of men withdrawn from their usual work. We must not waste anything. We must cut down our use of goods, especially of luxuries, and we must take the money and laborers from ordinary industries.

Only by readjusting our producing power can we produce all the supplies so imperatively required by the Government. It is estimated that the Government will use commodities equal in value to more than a third of all that we produced last year. When the matter is put in this way we see that it is the production of materials and supplies which can be used in waging war for which our Government is really calling. Money is merely the means to this end and is of no importance by itself.

#### RAISING THE MONEY.

How is Congress to raise the large sums of money required to pay the Nation's bills? The answer is known to all, for we are familiar with "Liberty loans" and are now paying new taxes. A part of the money is being obtained from taxes, a part from the sale of bonds.

#### NEW TAXES.

Two new tax laws are now in effect which directly or indirectly touch the pocketbook of everybody in the country. It costs more

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1. Some time ago a newspaper cartoon by McCutcheon entitled "Comprehending a Billion" showed how many minutes have passed since the beginning of the Christian era. Calculate how many.

2. What will be the interest at 4 per cent on 21 billions?

3. Can we have all "business as usual" when war business is so extensive? Would it be possible for us to spend as much on our living as before the war and provide the Government with all that it needs to carry on the war? If so, how?

4. Is it desirable or undesirable to spend \$60,000,000 in improving roads in a single State during the war? Why?

5. Is it desirable to invest large sums in the erection of apartment buildings during the war? Why does Great Britain practically prohibit building except for war purposes and place great restrictions even on repairs?

6. Do men in the Army use up more supplies than they would in ordinary life?

7. What effect has the withdrawal of men for the Army had on industry?

to send letters than it used to. It costs more to travel on trains. People also pay extra taxes on incomes, excess profits, and luxuries.

These new and higher taxes were voted by Congress and were in this way made a part of the law of the land. Since Congress is made up of the representatives of the people, we may say that the people of this country have agreed to give some of their money to carry on the war every time they mail a letter or use taxed articles, or enjoy a luxury. As a result of this legislation it is expected that the revenues will be increased to about \$3,800,000,000 a year. And Congress is likely to enact new tax measures in the near future.

#### INCOMES AND EXCESS PROFITS.

Incomes are heavily taxed. About a third of the revenue expected under the laws now in effect will be derived from the income tax. Single men and women whose incomes exceed \$1,000 and married men and women with incomes of more than \$2,000 a year have to pay an income tax. Corporations are also taxed. Beginning at a very low point, this tax approaches 67 per cent in the case of incomes amounting to several millions of dollars.

Excess profits—that, is those profits which are larger than before the war—are heavily taxed. About two-fifths of the total revenue from the tax will be derived from unusually large profits made during the war. In iron, steel, copper, and many other industries, profits are much larger than usual because of the enormous war demands for their products. Altogether the excess of profits over the peace level amounts to several billions of dollars, and the tax imposed ranges from 20 to 60 per cent. Thus the larger

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1. What does a Liberty bond promise the holder? When does it become payable? When due? What will the Government do when bonds fall due?

2. Who has a right to impose taxes for building a country road or paving a city street?

3. Suppose that a county needs a courthouse. How does the county get the money?

4. Get an income-tax blank and see what it is like.

5. What are some of the forms of wealth that are exempt?

6. What forms of wealth are most heavily taxed?

7. What is the exemption granted if there is a minor child in the family?

8. Who collects the various forms of taxes? What time in the year are they due?



part of the taxes will be paid by those with large incomes and high profits. The great mass of the people is not compelled to shoulder the larger part of the tax burdens.

#### LUXURIES TAXED.

Tobacco, beer, whisky and brandy, soft drinks, freight bills, passenger tickets, patent medicines, chewing gum, movies and nearly all other amusements, club dues, automobiles and motorcycles, musical instruments, talking-machine records, and many other things have been either newly taxed or more heavily taxed for the support of the Government. A large part of these taxes will be borne by those who tax themselves by using tobacco and intoxicating drinks, by buying sporting goods, automobiles, and other luxuries, or by going to moving-picture houses and other places of amusement. Few of the taxes are placed on things people must buy or do, for Congress has thought it wise not to tax necessities. Because of high prices it is hard for many to pay for the necessities and comforts to which they are accustomed, even though the Government does not tax them.

#### BORROWING MONEY.

Besides levying taxes the Government also borrows money through the sale of its bonds. Interesting questions have arisen

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1. What is meant by the loan policy of financing a war?
  2. Why is it generally easier for a government to get money by selling bonds than by levying taxes?
  3. What do you think of the position of many who hold that the foreign governments should sell their bonds directly to us rather than have our Government take them and sell its bonds in their stead? Would the bonds be bought? What about the rate of interest that would have to be paid? Would it be wise to have two or more governments engaging in bond-selling campaigns at the same time?
  4. Wages have gone up as a result of the war situation. Can you see some reasons why?
  5. If necessities were taxed, would not the Government get the money it needs faster?
  6. Is there any limit upon the amount a government can borrow? Is a large national debt a source of strength or weakness? Should a Government debt be paid? Why or why not?
  7. Which would you expect to disturb business more, taxation or borrowing?
  8. When arrangements were made for the loans to our allies it was stipulated that the money should be spent here. What are we really lending our allies?

as to which method of raising the necessary revenue is preferable, to what extent each should be used, and as to what kinds of taxes and what forms of loans should be employed.

The statesman has no more difficult questions to answer than these. In arriving at a decision he must consider many things; among them justice to everybody, convenience, and the readiness with which the necessary money can be obtained. He must take into account the effects of what is done, on business, on the political situation, on the amount of wealth in the hands of different classes, and he must keep in mind the use to be made of the funds.

#### LENDING TO THE ALLIES.

In considering these questions it is to be noted, first of all, that a large part of the money collected by our Government is for the use of the allies. Already more than four billions have been loaned to them, and nearly all of it has been spent in this country for supplies and munitions. In return for this money our Government receives the bonds—the promises to pay—of the countries to which the loans are made. Since our Government holds these bonds, it is proper that it, in turn, should obtain the funds for these foreign loans by selling its own bonds. By so doing our business men who furnish goods are really paid by those who buy United States bonds, when it would be difficult if not impossible for the allies to sell their own bonds in this country.

#### THE LOAN POLICY.

When we come to the question of the best way to raise money for the use of our own Government, we find strongly opposed views. During the War of 1812 and the first half of the Civil War the so-called “loan policy” was followed. The loan policy of financing a war means that only enough is raised from taxes to meet

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1. Paper money put out by a government without promise to redeem it in gold or something else upon demand is called a “coerced loan.” Who makes the loan?

2. What is a “greenback”? If it had been redeemed on demand, could it have fallen to 40 cents on the dollar?

3. Can a government save money by issuing paper money instead of selling bonds? If so, would it be wise to issue it? Why or why not?

4. How much is paid to a soldier and to a sailor?

5. What arrangements have been made for the soldiers' families? Review from an earlier lesson.

6. What is the pay of soldiers in other armies?

the peace-time bills, to pay the interest on new debt contracted, and in the course of years to provide a fund for the payment of this debt. The extraordinary outlays, like those for keeping the Army at the front, are met by borrowing. Though this loan policy has been widely followed in the past and is now followed in most of the countries at war, perhaps no one whose opinion carries much weight in the United States would advocate its use at the present time in this country. The main reason for this is that the loan policy has proved to be a bad one in past wars, for without proper support by taxes money can be borrowed only on harder and harder terms. All agree that more money should be collected from taxes than called for under the loan policy.

#### LOANS THE POPULAR METHOD OF WAR FINANCE.

While it is agreed that the loan policy is bad, there is, nevertheless, a very general feeling that the greater part of the additional revenues required during the war should be obtained from loans and only a fourth or a fifth of it, say, from taxes. People dislike to pay taxes. They buy bonds much more freely, because they get their money back later with interest. And, if they need the money before the Government's promise to pay becomes due, they can sell a bond to someone for cash, or they can use it as security and borrow money at a bank. A man said the other day, "I don't want to pay taxes and get a tax receipt. I will buy Liberty bonds, for I then draw interest and later get my money back."

#### LOANS DO NOT SUPPLY REAL GOODS.

Borrowing most of the money needed might be advocated on the ground that it is the easiest way to get it, for most people feel as this man does. The chief argument used in favor of borrowing is that the burden of paying taxes is then shifted to the

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1. "A nation which employs war prisoners to do its work is increasing its army." How?
  2. How does our Government try to increase production? Review the lesson on fixing the price of wheat.
  3. How are we to save supplies?
  4. Review once more the list of supplies which it is most urgent that we save.
  5. In earlier times armies "lived on the country." Why is this not possible now?
  6. This is a war of machinery. What effect does this have on costs?

next generation and the cost of the war is spread over a number of years. This, however, is a mistaken idea. The burden can not be shifted to the next generation, nor, in the present situation, can it be shifted to other countries by borrowing abroad.

What the Government really gets is labor and goods of one kind or another. We can not get the goods needed from other countries and pay for them later. There is no one who can extend credit to us as we extend credit to our allies. We must produce and supply the Government with what it needs ourselves. Here is where the burden lies, and inasmuch as the Government must be supplied now, the burden can not be shifted to the next generation or spread over a number of years.

The full understanding of these financial problems requires a knowledge of banking and of the way in which loans affect prices. We shall not attempt to take up these matters here. The lesson which is clear from what has already been said is that we can not get through this war without real sacrifices and without straining every energy in the production of goods.

Our Government is trying to induce farmers to plant more crops, to persuade laborers and employers to cooperate in the production of manufactured articles. The Government has commissions which are building ships and others which are arranging the purchase of supplies.

All the transactions are carried on with money, but they are all aimed at getting things needed for use. No better example could be found with which to show, on the one hand, the importance of money, and, on the other hand, our dependence on things which constitute the real supplies which are required for life.

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LESSON B-23. THRIFT AND WAR SAVINGS.<sup>1</sup>

The Government of the United States is asking the people of this country to save. We are asked to save food, to save fuel, to save labor, and to save money. Two reasons are given why it is necessary that we save. In the first place, the country must have materials with which to carry on the war and materials with which to help our allies across the ocean. Since the Government needs so much more than it has ever required before, the people will have to go without some of the things that they have been accustomed to use. The fact is that we should have to go without many things even if the Government were carrying on no campaign for saving, because the world's supply of a great many articles has been so reduced by the war that it is quite impossible to get enough to go around.

## SAVING WILL TEACH THRIFT.

The second reason why the Government is asking people to save is that we shall gain greatly in this country if we learn to avoid the wasteful expenditure of our wealth. The people of this country have in the past been very extravagant and wasteful. We have not tried to save food as the people of Europe do. We have been wasteful of our coal and petroleum, of our forests and water power. The result is that, in addition to what we actually eat and use for our comfort, we use up a great deal of good material without getting any return for it. We have been able to do this because the country is fertile and there has been plenty of land for the cultivation of crops and because we have had vast mineral wealth and native forests. The country has been supplied abundantly with everything that anybody could want, and the result has been that we have formed habits of the freest use of everything that the country afforded.

We no longer have great tracts of unused lands to be given away to settlers, and we have used up so many of our natural resources that the supply of them for future generations will be limited. We must therefore learn to save. The lesson of thrift taught by the war will prepare us for a kind of national life in the future which will be much stronger because it will be based

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<sup>1</sup> This lesson was prepared by Shailer Mathews, professor of historical and comparative theology, University of Chicago, and secretary of the War Savings Committee of Illinois. It calls attention to the plan for war savings which the Treasury Department of the United States has worked out for the purpose of obtaining a loan of two billions of dollars and at the same time giving the people of the country an opportunity to cultivate habits of thrift.

upon more careful use of the resources of the country. Government officials are telling us, therefore, that the enforced economies of the war are not without national advantage. The lesson of thrift will be one of the rewards that will come to the country in return for the sacrifices and struggles which the war has brought upon us.

#### THRIFT IS NOT HOARDING.

Since we have this lesson of thrift to learn and since the Government must have materials with which to carry on the war, it is important that we find out, first, what real thrift means, and, second, that we find out the ways in which we can cultivate habits which will make the largest contributions to the Government's need and to the successful outcome of the war.

Some people have the notion that thrift means the accumulating of money and putting it away where it will not be taken or destroyed. Such people ought to be reminded of the parable of the talents. The servant who buried his master's money in the ground where it would be of no use to him or anyone else made the mistake of merely hoarding the wealth that had been intrusted to him. That kind of saving is of no use to the world. Wealth ought to be employed, and the lesson of thrift which it is important for us to learn is the lesson of the proper use of our savings, so that these savings shall be the means of further production.

#### SAVINGS HELP TO PRODUCE NEW WEALTH.

Consider an example of the way in which savings can be made useful to the community. If a man who is earning \$100 a month by carefully economizing in his purchases and by going without

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1. Make a list of the different kinds of savings which the Government has asked the people of the United States to practice.
  2. What kinds of savings have been necessitated because of the lack of supplies in your part of the country?
  3. What materials are most likely to be lacking in European countries because of the interruption of trade that has come from the war?
  4. What are some of the materials of which there is a scarcity throughout the world as contrasted with the period before the war?
  5. What can you find out about types of economy which are being practiced in Europe more commonly than in this country? In this connection find out if you can how the forests are treated abroad and what is done to promote agriculture.
  6. What are some of the conditions likely to arise after the war which will make a special demand on the people of our country for the practice of thrift?



some of the luxuries that he might enjoy lays aside each month \$5, he will accumulate a fund of money with which he can buy a machine. That machine will increase the amount of work which the world can do. The man's savings help him in this way to increase production. He can produce not only through his own labor but also whatever the machine can help him to accomplish. Suppose, for example, that the man earns his money by husking corn and invests his earnings in a husker. His earning power is increased in this way and if he is careful in his savings and in his purchase of machines, he may come ultimately to be able to produce many times what he could produce with his hands.

All the machinery of the country has been provided in this way. We speak of wealth which has been put at work as capital. Capital grows out of self-denial. If our ancestors thousands of years ago had eaten all their grain instead of saving something for seed, the race would have died of starvation. The seed which is saved during the winter and used for spring planting is capital just as the machine which is bought from a man's savings. The reason why we have so much more than our ancestors and the reason why the world can easily support an increasing population year by year is that we have added to human strength in producing crops and manufactured articles a vast amount of productive machinery and other forms of capital.

#### THRIFT A FORM OF FORESIGHT.

Many people do not see the importance of thrift, which consists in saving and using one's savings for wider production. If a man earns wages and then stops work as soon as he has obtained

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1. What are some of the rates of interest which money ordinarily draws when it is used to develop business?
  2. Why should there be a limit prescribed by law for the rate of interest? What is that limit in your State?
  3. What are some of the ways in which small savings can be profitably invested?
  4. Find out how the savings banks take care of people's savings.
  5. The Government organized some time ago a postal savings bank. Find out about this, if necessary, by going to the post office and getting a full statement about the methods of depositing savings in that way.
  6. What are some of the machines that are commonly used in the home to increase the efficiency of a worker?
  7. In the same way find out how machines help in farming and in some one line of manufacturing.

enough to keep him alive for a little time, we say that he has no foresight. He does not realize that he ought to keep on working all the time in order that he may save instead of using up all that he has earned.

To provide for the future by saving in the present is one of the differences not only between foolish people and wise people but also between the lower and the higher forms of civilization. There are savage tribes to-day who do not see the importance of laying aside capital for the future. People living in tropical countries have very few needs which are not immediately supplied by nature. They are not driven by the necessities of a harsh climate to provide carefully for future needs. They do not progress in civilization because they have not learned the lesson of thrift.

#### ADVERSITIES SOMETIMES CULTIVATE THRIFT.

Adversities which teach a people how to save and put aside capital have very frequently turned out to be blessings, because they have built up a civilization which otherwise could not have been developed. After the Franco-Prussian War, in 1870, the French people found themselves under the necessity of raising a great sum of money which victorious Germany imposed upon France as a war indemnity. This sum was equal to a billion dollars. It was believed by many people at the end of that war that Germany had succeeded in crushing France by demanding of her so huge a sum of money, but it turned out that the French people learned the lesson of thrift. Everybody saved and through this saving built up the industries of the country, and the result was in an astonishingly short time a prosperity and a productiveness which had never been equaled before.

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1. One of the methods of saving for the future is through the purchase of insurance. Find out what insurance means and what are the advantages of that form of saving.

2. Considering civilization as a system of saving, indicate some of the additions to the wealth of your community which have been made during the last year or two.

3. Is a public park the result of saving on the part of the community?

4. Are better modes of transportation the results of savings on the part of the community?

5. Do you know of any community or any section of a community which does not contribute very largely to the saving of wealth?

6. In this connection consider the relation of a tramp and a criminal to the community and indicate why it is that we regard such people as undesirable citizens.

## SMALL GOVERNMENT LOANS.

The French Government contributed to the prosperity of France by making it possible to invest small sums in Government securities. This is one of the important lessons with regard to saving which Governments have learned from the French example and have put into practical operation in the present war. Before the present war the Government of the United States sold its bonds only in large denominations. That meant that only large investors could buy Government bonds, for they were all sold for \$1,000 or more. The ordinary man who saves only a little money from year to year could not purchase these large Government bonds.

As soon as our Government found itself obliged to get the vast sums that were described in the last lesson it was decided that the small savings of the people must, if possible, be drawn upon for the use of the Government, and at the same time it was believed that all the people must be given training in how to save. The Government, therefore, issued bonds for much smaller sums of money. Some of the Liberty Loan bonds could be bought for \$50 each, so that even the small savings of the people could be invested in Government securities.

## A. PEOPLE'S LOAN.

Even this, however, did not meet fully the needs of the case. The Treasury Department has therefore organized a method of saving which makes it possible for everybody to contribute to the war, not only by going without wheat and meat and the other foods that are needed for the allies, but also by depositing with the

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1. Find out what nations were engaged in the Franco-Prussian War and what was the cause of that war.
  2. What is the relation of that war to the present war?
  3. In discussing peace terms in the present war a great deal is said about no indemnities. Explain what is meant by an indemnity. Why are some people advocating at the present time peace without indemnity?
  4. Why are Government loans more secure than loans in ordinary business?
  5. The Government usually pays a lower rate of interest than business concerns for the money which it borrows. Why should this be so?
  6. What was the rate of interest commonly paid on Government loans before the Liberty loans were launched?
  7. Among the large investors who purchased bonds of the Government before the war were banks. Where did they get the money with which to purchase the large Government bonds?

Government small sums of money which will help the Government to get the materials needed for the Army and Navy and for the other extraordinary operations of the war. By this means the Government expects to secure in a year \$2,000,000,000.

#### THRIFT STAMPS.

This plan for collecting small savings is very simple. The Government has issued two kinds of stamps. One kind of stamps are called "thrift stamps." They sell for 25 cents each. The purchaser of these stamps is supplied with a card on which he can paste them. The card has space for 16 stamps. It is filled up, therefore, as soon as one has purchased four dollars' worth of thrift stamps. These stamps can be secured at any post office and from numerous other stations that are established in banks and stores and in other places where they will be easily accessible to all the people. The mail carrier will bring them if he is asked to do so.

#### WAR SAVINGS STAMPS.

When the thrift card is filled up with stamps, it can be exchanged for another kind of stamp which is to be pasted on a certificate and is known as the "war savings stamp." Anyone can obtain the war savings stamps without waiting to save up the money in thrift stamps. The face value of a war savings stamp is \$5, but this value will not be reached until January 1, 1923. In January of 1918 the war savings stamp cost \$4.12. In February it cost \$4.13. In March and subsequent months of 1918 it will cost 1 cent more for each month during the year. If this war savings stamp is kept until January 1, 1923, the Government

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1. What was the amount of the first and what the amount of the second Liberty loan?

2. What is the rate of interest on the Liberty loans?

3. What were the methods used by the Government in securing subscriptions to these two loans? Why did these methods differ from methods that have been employed in earlier times?

4. It has been argued that, unless the small savings of the people can be secured for Government use, the business enterprises of the country will be disturbed. Show why loans by the Government might disturb the business of the country.

5. What is the average amount necessary from every person in the United States in order to secure the total amount which the Government wants from the war savings loan?

6. Examine a thrift stamp and point out why it bears the particular design which it shows.

will redeem it for \$5. If the owner wants to cash the stamp before 1923, he can do so, receiving back his investment and a rate of interest somewhat lower than that which will be paid in 1923. That means that the Government will pay to the owner of such a stamp what the stamp cost originally together with interest.

#### THE INTEREST WHICH THE GOVERNMENT PAYS.

The Government needs for its present operations a great many things which have to be purchased with money. The demand for these things is very urgent. If the Government is to survive the war, it will have to have these things immediately. It is willing, therefore, to pay to anyone who will contribute to the immediate needs of the Government a certain amount of interest above the original investment. The rate at which the Government will pay in 1923 for the money invested with it is 4 per cent, and this interest is compounded every quarter so that the returns to the individual investor who will buy the war savings stamps are large. If the money is drawn earlier, the rate is 3 per cent. The fact that the Government is back of the stamps makes them perfectly safe. Then, too, they can be registered at any post office and will be doubly safe as investments for the person with small savings.

The Government asks everyone to help sell the stamps. It asks that war savings societies be organized to distribute information and encourage those who would not save unless encouraged by others. Such societies will also provide for savings of less than 25 cents.

#### AMERICANS HAVE NOT SAVED AS THEY SHOULD.

There are a great many facts on record which show something about the extent to which the people in this country have saved

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1. Explain why a war savings stamp should cost more in March than it does in February, including in your explanation the reason why a thrift stamp does not change in price.
  2. Make some calculations which show approximately the amount of interest which the Government will pay on the war savings stamps.
  3. Why should an organization encourage people to invest in war savings stamps?
  4. How can such an organization work out a plan which will make it possible to deal with smaller sums of money than that required for a single thrift stamp?
  5. One of the most important activities of the Government during the war is to build ships. Explain the reasons why this war has been wasteful of ships.

money in the past. It is estimated that we produce each year goods that amount in value to 40 billions of dollars. We save about one-tenth of this amount year after year under ordinary circumstances, and much of this is added to the country's working capital. It is in this way that the country has built its railroads, its factories, its buildings, and its cities. It is through these savings that farmers have accumulated their machinery, their live stock, and their seed.

#### NEW DEMAND FOR MORE SAVING.

A vast amount of wealth accumulates in the country through this setting aside year after year of a certain amount of capital. We are asked now to produce a great deal more than ever before and to set aside for some years to come three or four times as much as we usually do. This means that everyone should try to save not only 10 per cent of what he produces, but 30 or 40 per cent of what he produces. Such additional saving will be necessary because war is sure to destroy some of the wealth of the country that has been set aside. The destruction of buildings and railroads is very great in the countries where the war has been carried on. In addition to this, the destruction of steel and gunpowder is very great through the mere explosion of the shells which are used in the big guns. There is also an enormous amount of waste because men have been taken away from useful occupations and have been wounded and in this way rendered unable to contribute to the world's industries.

Our savings will be in part wasted by the destruction of war, but we shall be trained in methods of economy and in the appreciation of the value of the things that we have in such a way that when the war is over we can begin to build up the railroads and buildings of the country more rapidly than we have been able to do in the past.

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#### REFERENCES.

The following publications can be secured from the National War Savings Committee of the Treasury Department, Washington, D. C.:

United States Government War Savings Stamps.

War Savings Societies: What They Are and How to Organize Them.

Textbook for Teachers on Thrift Stamps and War Savings Stamps.

School Plan Book for War Savings Campaign.

Other literature can be obtained by writing to the several State directors of war savings.



## Chapter VII.

### CONCENTRATION OF POPULATION, INDUSTRIES, AND INSTITUTIONS.

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It is not often that a city is made to order. Usually its growth is very gradual. A few families settle, it may be, near a crossing over a stream, or at a cove by a body of water, which seems to be a good place for boats to land, or at some break in transportation, as where a stage line meets a railroad. If the location proves favorable, others join the original settlers; merchants come to supply them with goods, mechanics to build their houses, and to repair their wagons; doctors to heal their sick, and lawyers to settle their disputes; churches and schools are established, and a village develops. Agriculture in the vicinity is stimulated, trade increases, manufacturing and transportation facilities are improved, but years generally pass before a full-fledged city appears. Sometimes, indeed, great numbers of people flock to a place where some valuable mineral has been discovered and build a city suddenly and unintentionally.

There have been a few conspicuous instances, however, in which a city has been deliberately founded for a definite purpose and endowed with the attributes of a metropolis, all within a comparatively short time. Peter the Great founded St. Petersburg (or Petrograd) and compelled people to move there whether they wished to do so or not. The city of Washington was planned and built for the capital of the Nation, but many years passed before it was a city in fact. The Russian Government required only a few years to build the city of Dalny as a terminus of the Trans-Siberian Railway.

Villages have frequently grown up about single manufacturing establishments, and some of them have become fair-sized cities. In the case of Gary, Ind., the complete city was deliberately planned from the beginning and built for the purposes of a great industrial corporation. The way in which it was done makes an interesting and instructive story.

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### LESSON B-24. BUILDING THE INDUSTRIAL CITY OF GARY.

By G. W. SWARTZ, *Assistant Superintendent of Public Schools, Gary, Ind.*

In the spring of 1906, if one had walked along the southern shore of Lake Michigan, where to-day is the city of Gary, one would have found only acres of sand dunes and scrub oaks, with here and there a farmhouse or a squatter's dwelling. Gary has grown up within 11 years. It has a population of 70,000 inhabitants. About half of these are foreigners, many of whom have come to America within the 11 years that have elapsed since the city of Gary was established. The other half are native Americans who have come from all parts of the country to find employment in one of the greatest industrial plants that have ever been built.

The city of Gary was established by the Indiana Steel Co., which is a subsidiary company of the United States Steel Corpo-

ration. As the site for their new city, the Indiana Steel Co. purchased several thousand acres of land in the northwestern corner of the State of Indiana, extending for 6 miles along the southern end of Lake Michigan and about 30 miles east of Chicago.

#### ADVANTAGES OF LOCATION.

The reason the Indiana Steel Co. chose this particular site may be understood by anyone who studies a map showing the regions from which coal and iron can be obtained. Iron ore is found in great quantities along the shores of Lake Superior and is brought to Gary in large lake boats that make the trip by a water route from Lake Superior to the end of Lake Michigan. Numerous railroad lines connect with the coal mines that supply the coal necessary to make the coke for feeding the furnaces that smelt the iron and for power with which to drive the great machines that handle the iron and steel in the mills.

Furthermore, the railroad lines necessary to carry away the products of the Gary steel works are available, as all trunk lines converge in the Gary region and are connected by belt lines encircling the entire district, including the city of Chicago.

Great yards for the storage of cars have been provided which will accommodate 15,000 cars. In these yards the materials that are turned out by the steel mills can be stored until they start on their trip eastward or westward across the continent.

The steel company's holdings are used for mill sites, business blocks, parks, playgrounds, and homes. The rapid growth in

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1. Mention some of the reasons which determine the location of cities.
  2. Find a number of cities, through a study of your geography, that are dependent upon agriculture for their chief business. Contrast these with cities that are chiefly commercial.
  3. What are some of the great industrial cities of the United States? What are some of the chief industrial cities of Europe?
  4. What natural advantages are necessary for industries? In answering this question, distinguish three or four typical forms of industry.
  5. What is meant by a subsidiary company? What are some of the advantages in business organizations of such companies within a great corporation?
  6. What are the chief sources of iron ore in the United States?
  7. What are the geographical facts that determine the development of the city of Pittsburgh as the first great iron and steel center in the United States?

population made it necessary to expand the city, which now covers 31 square miles, or more than twice the area as originally planned. This expansion is due to the gradual absorption of large areas of land held by individuals and land companies wholly independent of the steel company. A large part of the foreign population lives in that part of the city acquired in this way.

#### ADVANTAGES ARISING FROM NEW CONSTRUCTION.

One advantage that came from building this city and its steel works on an entirely new site was the advantage of arranging the mills in such a way that there could be the closest cooperation between different branches of the industry. Most industrial plants grow gradually, and the placing of the buildings and the construction of roadways can not be planned in advance. In this case there was nothing to prevent laying out the city and building the mills in accordance with the most modern municipal and industrial practice; but it required the expenditure of a great amount of labor and vast sums of money to put this site into shape for use. The mill site, for example, was crossed by several lines of railroad and by a winding river. The railroads were relocated and elevated through the city of Gary. The river was straightened and its original bed through the mill site was filled with sand on which several of the mills have since been built.

#### HANDLING THE ORE.

As there was no harbor of any kind, the steel company built a slip with a breakwater protection. The slip is about 5,300 feet

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1. What are some of the chief railroad lines that pass near Gary?
  2. Indicate by reference to a map of the Chicago region the reason why a belt line is necessary to the development of Gary and its railroad connections.
  3. Find some industrial plant which has grown up gradually and show that the arrangement of its buildings could have been planned better if the development could have been foreseen from the outset.
  4. Why is it necessary to elevate railroad tracks under conditions such as those which arose when Gary was established?
  5. Most harbors have been improved so as to make them good landing places for large boats. Find out some of the modes of improving harbors.
  6. Get a fuller description, if you can, of a Hulett unloader.
  7. Does the ore which comes from the Lake Superior region look like the ore that is produced in the Pennsylvania iron region?
  8. Get a description of a blast furnace and show what it does to the iron ore.

long, 250 feet wide, and 23 feet deep, with a turning basin and with draft and anchorage facilities for the largest Lake boats. These boats, which have been loaded in Duluth or Two Harbors, arrive at the Gary slip and find Hulett unloaders ready to take up the ore.

The unloaders pick up 10 to 15 tons of ore at a load and dump it into what is known as a stock trough. From this stock trough it is picked up and transferred to stock pockets or storage bins back of the blast furnaces by means of bridges which are about 500 feet long. From this point the ore is taken up by little cars which run under the stock pockets and deposit the ore in what are known as skip cars or elevators that carry it to the top of the blast furnaces. Into the blast furnaces are put also the other materials that are necessary for smelting the ore. Coke and limestone are used for this purpose. Limestone is brought into the Gary slip in great quantities by water and rail.

#### CARRYING THE PRODUCTS OF ONE PLANT TO THE NEXT.

The molten iron is tapped from the bottom of the blast furnace into 40-ton "ladles," brick-lined vessels, which in turn transport it to other furnaces, where it is purified into steel. These steel furnaces turn out what are known as steel ingots. As soon as the ingots cool sufficiently to be moved, they are conveyed to the rolling mills. Here they are heated to a uniform temperature in soaking pits, and rolled into the different kinds of steel products, such as rails, billets, slabs, and so on. When the molten iron is cast into molds and allowed to cool before it is changed into steel, it is called pig iron.

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1. Why is limestone used in the smelting of iron ore?
  2. From what region around the Great Lakes is limestone brought to the Gary slip?
  3. Show somewhat more fully than the text does the reasons why it is economical to have a series of plants located in such a way that they can pass their products along easily.
  4. What is the difference between pig iron and steel? In answering this question find out something about the different methods of producing steel.
  5. The process of producing steel is relatively modern. Find the dates at which some of the processes most commonly used at the present time began to be developed.
  6. How does a rolling mill turn an ingot into a steel rail?
  7. What is coke, and why is it used in steel mills?

## USE OF BY-PRODUCTS.

The making of steel and the smelting of iron require the use of large quantities of coke. This is a product which comes from soft coal that has been heated in a closed furnace so as to drive off the coal tar and gas. In producing coke, great quantities of which are necessary for the furnaces of the Gary works, a number of by-products are produced which are of great commercial value. This by-product material is shipped in barrels and tank cars to factories in other parts of the country. Coal tar, for example, is produced at the Gary plant to the extent of 18,000,000 gallons a year. This great quantity of material is valuable because it contains the substances out of which dyes and many important drugs are made.

## GREAT QUANTITIES OF MATERIAL.

Each year 5,400,000 pounds of ammonia sulphate are produced. Liquid ammonia is produced to the extent of 2,000,000 pounds a year. These valuable by-products are of special importance at the present time, because they are essential to the manufacture of certain high explosives. Indeed, during the period of the war Gary has been one of the busiest cities in the United States. It has been called upon to turn out great quantities of steel, not alone for the ordinary purposes of peaceful construction, but for shells and for guns. In addition, benzol and toluol, used in producing high explosives, are carefully collected from the coke ovens and used for war purposes.

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1. Review one of the earlier lessons in which the use of the by-products of the coke industry was discussed.

2. Find some method of showing how much space would be filled by 18,000,000 gallons.

3. In the same way show what some of the other figures given in the text really mean. In order to do this it will be necessary to find out what ammonia sulphate looks like.

4. What are some of the purposes for which steel is used in times of peace?

5. Steel has been substituted for other materials in modern industry. What are some of the substances for which steel has been largely substituted?

6. How many miles of railroad could be built from the steel rails produced by the Gary mills in a single year?

7. Show how a community which is growing gradually meets some of the needs that in Gary called for city engineering on a large scale.

The huge amounts of material that are handled in the Gary mills can hardly be understood, if reported in the number of tons produced each year. The coke plant, for example, which furnishes the coke for the blast furnaces has a capacity of 3,625,000 tons of coke annually. This requires the use of 12,000 tons of coal every day. The docks receive 4,500,000 tons of iron ore and limestone in the course of a year. The annual capacities of the different units are as follows:

	Tons.
Rails.....	900, 000
Billets and blooms.....	1, 300, 000
Slabs.....	540, 000
Plates.....	336, 000
Axles.....	120, 000
Merchant steel.....	600, 000

CITY PROBLEMS.

Bringing together all of the people who are concerned in this industry has created many problems of city life with a suddenness that is in striking contrast to the gradual growth of most cities. To build a city on the sand dunes required the development of great city enterprises. For example, this city had to be supplied with water. It built a tunnel into the lake. This tunnel is 15,000 feet in length and 72 inches in diameter. It extends under the bed of Lake Michigan to a sufficient distance to secure water fresh and free from pollution in quantities sufficient to supply a city of 250,000 inhabitants.

SOCIAL AND HYGIENIC ORGANIZATION OF THE INDUSTRIES.

The steel mills themselves have been organized, not only on the industrial side, but from every other point of view, with full regard

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1. What is a billet? What is a rail?
  2. Why was the water system of Gary made so much larger than is necessary for the present population of the city?
  3. Does it pay an industry to provide its workers with such comforts as are described in the text?
  4. Show the difference between a number of different occupations with regard to the dangers that attend these occupations.
  5. What kind of instruction not given in the ordinary school would be needed by a worker in the steel mills?
  6. It is pointed out that after the war there may continue to be, as there has been for the past four years, a reduction in the number of foreigners who come to take part in American industries. What effect will this have on American labor and American business organization?



to the best practices of modern industry. Provision has been made for the workers; modern sanitary equipment has been installed in all of the different works so that the individual laborers may have hot and cold water, soap and fresh towels for shower baths and lavatories. There is a hospital service for accidents or illness, and the management makes every effort to provide safeguards against accidents. The United States Steel Corporation maintains a liberal pension service for its employees in the Gary industries, the same as in its other plants.

The management of the mills has encouraged the men to organize to keep themselves in the best of condition. There are indoor and outdoor athletics. Schools have been organized within the plants to give instruction in various branches of the steel industry. These schools also make an effort to train foreigners who have recently come to the United States in the duties of citizenship. There is a newspaper published by the employees which serves as an educational influence and keeps alive community spirit throughout the works.

Around the central steel works have grown up many other industries which were attracted to the city by transportation facilities and by the possibilities of utilizing the materials that are brought to this center by the steel mills.

#### GARY SCHOOLS.

The schools of Gary have attracted nation-wide interest. These schools grew very rapidly with the increase in population, and

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1. Service pensions serve to keep the employees of any industry in its employ for a long period. Show why this should be so.
  2. Show how transportation facilities in a city help to build up industries. Can you give an example of the way in which a city has grown up around a railroad or some other means of transportation?
  3. Among other industries that have grown up near Gary is a great Portland cement plant. Why should this be connected with the steel mills?
  4. Why did the rapid growth of the city of Gary result in a difficult problem of school organization? In order to answer this question, find out what are the sources of money with which schools are organized and school buildings erected.
  5. Compare the program of daily exercises which is suggested by the name of the Gary plan with the program in your own school.
  6. How large a playground should there be around a school building having the number of pupils enrolled in your school?

were, like the steel mills, unhampered by any traditions. The work is organized on what is known as the "study-work-play" plan. Large playgrounds surround the schools, which are themselves equipped with auditoriums, gymnasiums, and shops.

The study-work-play school in Gary is able to provide equipment and time for play and for handwork, in addition to the traditional equipment and time for academic work, without increasing the school cost for equipment or for instruction. This is accomplished by alternating classes between the study, work, and play departments so that all of these departments are in use simultaneously throughout the school day. The programs are arranged so that the industrial work is optional. In actual practice it is possible to arrange a sufficient number of individual pupil programs to provide a school course to meet the needs of practically every child and the wishes of his parents.

#### A WELL-ROUNDED COMMUNITY LIFE.

Gary is thus unique in the history of cities. It stands to-day as a remarkable testimonial to the genius of its builders. When one considers that only a decade ago the site on which Gary is located was nothing but a wilderness, its development appears little short of miraculous. It is not so much its size that now attracts attention, for other American cities have grown with great rapidity. It is rather the many-sided development of the community life of the place that makes Gary so interesting. Most rapidly growing industrial cities are woefully lacking on the educational, recreational, and social sides. Gary has become a model for many an older community in these lines as well as on the side of productive efficiency. In short, it is an excellent example of what may be accomplished when the founders of a city realize that efficient organization of industry should go hand in hand with the development of a well-rounded community life.

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LESSON B-25. CONCENTRATION OF PRODUCTION IN THE MEAT-PACKING INDUSTRY.<sup>1</sup>

Sixty years ago the fresh meats that were served on people's tables were for the most part produced in the community. The local butcher purchased the animals from the farmer, dressed the meat himself, and sold it over the counter of his little shop or peddled it from a wagon to the families in the neighborhood.

However, there were geographic reasons why beef, pork, and mutton could not continue to be produced indefinitely near the place where they were used. The great, flat, fertile prairies of the central Mississippi Valley and the extensive plains farther west were so naturally adapted to furnishing the food supply of live stock that no other district in the United States could long compete with them in this industry.

## SMALL BEGINNINGS OF THE MEAT-PACKING INDUSTRY.

To Chicago, lying in the center of this rich valley, there came in the sixties and seventies the men whose names have become most widely identified with meat production. Some of these men were merely local butchers; some were stock buyers who purchased live stock from the raisers and shipped it to the Eastern States "on the hoof." Still others of these "meat men" were packers as well as dealers. The packers did some slaughtering, especially of hogs, and salted, smoked, or otherwise preserved the product before shipping. This work was the original packing industry of Chicago. Compared with the great meat industries in Chicago to-day, these enterprises were small and simple. Let us see what brought about the industrial concentration which changed those small concerns into great packing houses.

## SHIPPING LIVE STOCK TO EASTERN MARKETS WAS EXPENSIVE AND WASTEFUL.

Shipping stock "on the hoof" to eastern cities was a risky business, conducted in a wasteful way. The stock which was loaded into stock cars in Chicago arrived in the East much shrunken in weight. Stock became sick, was often injured, and many of the animals died on the long journey through varying weather and temperature. At certain points on the route the stock was

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<sup>1</sup> This lesson was prepared by Leverett S. Lyon, instructor in the University High School and the School of Commerce and Administration, University of Chicago. It shows how groups of industries grow up around some central industry. The secondary industries are sources of economy and as such aid the central organization even when they are not parts of it.

unloaded, fed, watered, and rested. The expense of this process was either added to the cost of meat to the eastern consumers or was subtracted from the price which the Chicago dealers paid the cattle raisers. A little more than half of an animal can be used for meat, and in those days the balance, with the exception of the hide, was sheer waste. Thus, to the other wastes of the system had to be added nearly a half of the freight cost.

#### THE REFRIGERATOR CAR.

Under such circumstances it was not strange that the Chicago cattle dealers were anxious to find a method by which fresh, dressed meat could be shipped to their eastern buyers. Such a method was found in the construction of refrigerator cars. In these cars chilled meat could be sent in perfect condition to the most distant markets.

The builders of the first of these cars took great risks, because the cars were at best experiments. The railroads were unwilling to take this risk, and they believed also that many of their livestock cars would be rendered useless if the refrigerator cars were satisfactory. As a result of these and other circumstances, the packers themselves were compelled to build refrigerator cars. Thus the business of the stock dealers was expanded into a new but an allied industry, that of transportation. Meat dealers were no longer merely stock dealers and butchers. They became owners of transportation facilities. This phase of the packing business has developed until now at least 25,000 refrigerator cars are owned and used by the Chicago packing plants.

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1. Ask your father or grandfather to tell you how fresh meat was secured when he was a boy. Ask him to compare the quality of meat then and now and to tell you of the difficulties of securing it in good condition at all seasons of the year.

2. The scientists who devised artificial methods of freezing must in part be thanked for the ease with which we secure fresh meat to-day. Why?

3. Explain what is meant by saying that the Mississippi Valley is naturally adapted to raising live stock. To what else is this valley adapted? Are other areas especially adapted to other purposes? Give examples.

4. Look up meat packing in the encyclopedia and learn what you can of the industry. What can you learn in an encyclopedia of the men whose names you associate with fresh-meat products?

5. Why does the Food Administration ask the people of this country to be especially saving of beef and pork?

## ONE EXPANSION LED TO ANOTHER.

The perfection of the refrigerator car soon carried the Chicago packers into a big business. If dressed meat was to be shipped East, packing houses had to be established. Clearly the greatest economy in shipping would result from slaughtering the stock as near as possible to the ranches where it was raised. As Chicago lay in the very heart of the stock-raising country, had a natural harbor at the foot of the Great Lakes, and was the terminal for the railroads both to the East and West, it was the location where the work of slaughtering and dressing inevitably concentrated. Thus, the adoption of the refrigerator car, which resulted from the efforts of stock dealers to avoid the wasteful methods of shipment, in turn forced them into slaughtering on a tremendous scale. The refrigerator car was thus the foundation of the concentration of meat packing in Chicago. Its introduction also made it possible for the Chicago packers, by establishing branch plants in Kansas City, Omaha, and other western cities, to keep close to the ranches as the cattle-fattening industry extended westward.

## STILL FURTHER CONCENTRATION BECOMES DESIRABLE.

When the Chicago packers began the slaughtering business on a large scale it became necessary to find methods of selling their products. Many of their old customers for live stock would not buy dressed meats, as they were themselves in the slaughtering business and were thus in competition with the growing Chicago industry. Yet it was very necessary that the fresh meat which was produced every day in Chicago be distributed rapidly and efficiently. Otherwise car space would be consumed for storage and dressed meat would accumulate. The accumulation would thus result in waste and great expense. Moreover, many people

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1. Make a list of the wastes of the old method of shipping live stock "on the hoof."
  2. Does it seem reasonable to you that the railroad would hesitate to build refrigerator cars while these were still in the experimental stage?
  3. Find out what you can about refrigerator cars, early experiments, methods of packing, etc. Detail one member of your class to visit a local meat dealer or, if possible, an agency of one of the packing houses, and to inspect a refrigerator car.
  4. The refrigerator car was the foundation of the western packing industry. Explain what is meant by this statement.
  5. The improvement of the refrigerator car and the wastes of the old system pushed the packers into new industries. Is there any truth in this statement? Explain.

living at a distance from Chicago were inclined to believe that meat could not be conveyed to distant markets in an edible condition. The local butchers were not slow to encourage this belief.

These conditions made it desirable for the Chicago packers to establish branch offices throughout this and other countries. These branch offices were controlled from Chicago, and soon made Chicago dressed meat a recognized standard. They have grown in number until now each of the large concerns has selling agencies in as many as 400 cities in the United States and in many cities abroad.

Nor was this all. Some of the Chicago packers desired to ship only dressed beef, but they found that the market keepers who bought beef from their agents in other cities demanded that they be supplied with pork, mutton, and other products as well. The demand upon the packers' agents for a wider variety of supplies was not the only force impelling the packers to widen the scope of their business. The packers discovered that, once their large plants were built, they could handle pork, mutton, and other food supplies without very great increase in their total overhead costs, and by so doing they were able to sell each unit of their product at a greater profit or a lower price.

Overhead costs incurred in operating refrigerator cars also helped to induce the packers to expand further the size and variety of their ventures. When the refrigerator cars were first sent to various parts of the country, they were returned empty. Here, plainly, was a great waste. It cost nearly as much to haul the cars empty as it cost to haul them loaded. The packers, therefore, looked about for goods which could be brought under refrigeration on the return trip and sold in Chicago. A system of buying was worked

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1. The perfection of the refrigerator car almost forced the Chicago packers into the slaughtering business. Explain.

2. What advantages had Chicago that caused it to assume leadership over such cities as Cincinnati, Kansas City, and Omaha? Why did the packers later find it very advantageous to establish branch plants in Omaha, Kansas City, and other western cities?

3. When the railroads from the East were built to Chicago the business opportunities of the Chicago region became enormous. Explain this statement. Do you think the conditions that existed at that time account in part for the number of men who advanced rapidly from insignificant posts to important positions?

4. Does it appear to you that business opportunities for persons without special training are as plentiful as they were in the days of the "expanding West"?



out, and eventually fruit, butter, eggs, cheese, and vegetables of many sorts were being brought from every part of the country in the returning refrigerator cars. One way of making sure that these goods could be disposed of when they reached Chicago was to establish a preserving and marketing organization. This was done by more than one of the large packing plants. Thus the demands of their customers and the pressure of overhead costs induced the packers to become merchants in a great variety of goods.

#### THE USE OF BY-PRODUCTS CAUSED FURTHER CONCENTRATION.

As we have seen, the early methods of dressing meat discarded as waste nearly half of the slaughtered animal. But science was busy, and discoveries one by one showed valuable uses which could be made of the parts of animals which had been thrown away. It was found that the horns and hoofs could be used for buttons, knife handles, and cane handles; dried blood commanded a high price as a fertilizer; parts of the bones and cartilage could be turned into glue. A new invention made it possible to use parts of the fat, hitherto almost useless, for the manufacture of oleomargarine. Eventually every minute scrap of the slaughtered animal was put to some profitable use.

To find a market for some of these by-products, however, it was necessary that they be combined with other articles into a manufactured form. This impelled the packers into a further expansion. To utilize their glue, for instance, the manufacture of sand paper, which takes large quantities of glue, was undertaken. Soap factories, glue works, curled-hair industries, fertilizer plants, and pharmaceutical laboratories were constructed to make the use of various by-products most profitable.

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1. What difficulties had the packers in marketing their products? How were these difficulties overcome? Explain how this activity led to increased concentration of production.

2. Look at the notice that is printed on the back of a Victrola. Make a note of the various matters that the manufacturer tries to control after the machine leaves his hands. Why should a manufacturer try to control these matters? Does this appear to you to be an attempt at further concentration? A recent court decision holds that the notice referred to is not binding at law. Does such a decision suggest that the law favors or opposes concentration?

3. In what ways did overhead costs make it advantageous to the packers to slaughter all kinds of live stock? Would one be justified in saying that overhead cost was one cause of concentration in the packing industry? Explain.

Thus the business of meat packing developed from simple beginnings into the form of tremendously concentrated production. It is an industry concentrated in two ways. First, it is large scale; that is, the various plants are of gigantic size. Second, it is integrated; that is, related industries are concentrated into one. At least two of the largest packing companies now have resources of over \$200,000,000 each. One of the largest operates 16 vast plants covering a total of 300 acres, with a daily killing capacity of 98,000 animals. Forty-five thousand workers are employed by this company, which sells 3,000 products through 416 branch houses in this and at least 12 foreign countries.

This illustrates a kind of business organization which is typical of modern times. Where many allied industries are integrated into one organization, there is an advantage from the fact that each part can be planned to work in harmony with every other part. A small business must establish relations with many other enterprises. Sometimes this can be done only with difficulty. An integrated industry includes many of the other enterprises, and harmonious action is easy. If a business has plants in several parts of the country, it can ship goods to purchasers from the nearest one, thus saving on cross freights. Also, when business is dull it can close certain plants and at the same time keep other plants running at full capacity, thus reducing overhead charges.

Perhaps the greatest advantage which comes with large-scale production is in the use of by-products. The small-scale butcher must throw away nearly half of his raw material, while the packer utilizes everything.

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1. A recent financial statement published by certain packers showed that during one year the average price paid for a 1,000-pound steer was \$62.50. The meat was sold for \$58.65; that is, about \$4 less than was paid for the live animal. The packers, however, received \$15.06 for the by-products from the animal. What do these figures indicate concerning the advantage of manufacturing by-products? Does it appear that it is advantageous to the users of fresh meat to have the packers extend their enterprises to the making of by-products?

2. Explain how the utilization of certain by-products has led to still further concentration of production.

3. Explain what is meant by large-scale production and integrated industry.

4. Give some other examples of the use of by-products in manufacturing and show how in all of these cases there is an economy from the use of these by-products.

All of these advantages are increased by the fact that the large concern can afford to make constant experiments looking to improvement and it can employ the most competent managers.

#### WHY THE SMALL FIRM PERSISTS.

In spite of all these advantages the small firm still persists in many industries. Large-scale production depends upon specialization and machinery. Specialization and machinery can succeed only when there is a large market in which the buyers are willing to take wares exactly alike. There is not such a market for all goods and this gives the small firm a chance. In producing fitted clothes, the finest rugs, the best bound books, the finest furniture, and all forms of art work the large plant can not compete with the small one. So it is in producing all wares where the individual taste of the user must be pleased. Wherever the personal relation between buyer and seller is important the small business has the better of the race, and as a result the small local store is not easily crowded out.

#### THE PACKING INDUSTRY ILLUSTRATES A TENDENCY IN MODERN BUSINESS.

The changes in the packing industry are only one illustration of what has been occurring in many branches of American business during the last half century. There has been a very strong tendency toward producing goods in large establishments and toward a drawing together of related industries into one concern. A comparatively few large oil companies supply most of our gasoline and kerosene. They own not only wells and refineries but pipe lines, tank cars, and sales organizations. The largest steel company manufactures more than half of all the steel produced in the country and controls ore fields, steamship lines, and railroads

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1. Have different members of your class get all the data they can from an encyclopedia concerning the Standard Oil Co., the American Tobacco Co., and the United States Steel Corporation, and report concerning these companies as examples of concentrated production. Are they large scale? Are they integrated?

2. Make a list of as many advantages as possible that come to the large-scale business. What advantages, if any, come to the users of goods from concentrated industry?

3. In what kinds of business does the large organization find it impossible to compete with a small firm?

4. Explain why a department store has an advantage over a collection of small stores, each of which specializes in some one kind of merchandise.

as well. Railroads have of course concentrated the work done by almost every other form of carrier; department stores and mail-order houses, what was formerly done by many stores. In some parts of the country large farms are replacing the small homesteads.

Government reports show that between 1850 and 1910 manufacturing plants grew to such an extent that the average number of employees in each plant increased 225 per cent. In the same period the average amount of money invested in these plants increased 1,480 per cent. The causes for this concentration are mostly in such advantages of large-scale production as we have noticed in our study of the packing industry.

Large plants can make the best use of machinery. It is not profitable to buy very expensive machines unless they can be kept in constant use. But if they can be used continuously, they are very productive. The effort to take advantage of machine power therefore tends toward large-scale production.

Large establishments can also profit most from specialized work. They have enough work of every kind to keep men busy at very small tasks at which they become very skillful. In the packing plants 8 or 10 men work on the hide alone.

Many small firms grow up as satellites of the large plants. On the flanks of great packing houses, for instance, are swarms of smaller concerns that thrive by making repairs, building means of conveyance, using surplus by-product materials and in other ways making themselves complementary to the larger concern. Great advantages to society have come with large-scale production. Where monopoly has not been allowed to exist the reduced costs have been passed on to a great extent to users of goods, and the utilization of wastes has not only given us new goods but lowered the costs of the old ones. Many disadvantages to society have also come with concentration of production. However, they have been discussed in our study of machine industry or are centered in concentration of ownership or control and are considered in another part of this study.

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## LESSON B-26. CONCENTRATION IN THE MARKETING OF CITRUS FRUITS.<sup>1</sup>

The best known and most important citrus fruits are lemons, oranges, grapefruit, and citrons. There are two very important facts in connection with the citrus-fruit industry. First, the production of citrus fruits is confined to a very limited area and, second, the fruit is sold in all parts of the United States and Canada. These two facts have given rise to the marketing problems with which this lesson is concerned.

### WHERE CITRUS FRUITS ARE PRODUCED.

The growing region for citrus fruits in the United States is to be found concentrated in two States, Florida and California, with smaller areas in southern Arizona, Louisiana, and Texas. Even in the two banner States citrus-fruit culture is limited to small sections. There are five counties in southern and one in northern California that are especially adapted to citrus-fruit growing. In Florida three southern counties furnish by far the greater part of the crop. It has been said that "no other horticultural industry of equal extent is so compactly located."

The reasons for this concentration are well known. The soil "must be at least 4 or 5 feet deep; it must be free from hardpan or strata of coarse gravel; it must be well drained; and it should be so situated as to make irrigation easy." Climate, however, is the greatest barrier to the extension of the producing area. The citrus fruits thrive only in a tropical or a subtropical climate, and they do better in a subtropical climate. The groves nearest to the line where the frequency of frosts prevents commercial growing are those which produce the finest fruit.

### MARKETING PROBLEMS IN THE CITRUS-FRUIT INDUSTRY.

Although the region of production for citrus fruits is compact and limited in extent, no fruit is more widely distributed as an article of consumption. Lemons, oranges, and grape fruit to-day find their way into practically every town of any importance in the country. This is the more remarkable because of their highly perishable nature. They require the greatest care in cultivation, in picking, handling, packing, and shipping in order

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<sup>1</sup> This lesson was prepared by Carson S. Duncan, assistant professor of commercial organization in the University of Chicago. It describes the organization of the California Fruit Growers' Exchange, the most scientific and successful cooperative marketing organization in the world. It shows how concentration can overcome the difficulties of marketing at great distances from the source of production.

to reach the consumer in good condition. For these reasons no other industry presents more difficult problems or requires a more skillful distribution and marketing of the crop.

Before the formation of the California Fruit Growers' Exchange the only way in which the growers of citrus fruits could get their products to market was through middlemen. These included brokers, commission merchants, jobbers, soliciting agents, and local buyers. But none of them proved satisfactory. In the first place, the expense of selling—that is, getting the fruit from the producer to the consumer—was too high, amounting to one-half, or more, of the price which the consumer paid for it. Such very high costs for distribution increased the final price so much as to reduce demand.

#### UNNECESSARY MIDDLEMEN.

Not only was the old system too costly; it was also too cumbersome and too complicated. Farm produce often passed through the hands of three or four middlemen before it reached the consumer. Each of these middlemen had to be paid for his services and this added to the final price. There were freight charges, expenses for refrigeration, and storage charges; there were brokers' commissions, jobbers' profits, and retailers' profits. "It becomes bewildering to the average person when he finds there are no hard and fast lines which separate any of these agencies from another and that their functions overlap or may be identical."

Another difficulty was the distrust in which the producer held these middlemen. Against the commission merchants especially, the producer felt keen resentment. These middlemen acted as agents for the producers; that is, the growers of fruit shipped it to the commission merchants who were located in the large market

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1. Do any fruits other than the citrus fruits have localized production?
  2. Where does your local supply of apples come from? Berries? Plums? Pears?
  3. Are apples, pears, plums, and berries as carefully shipped as citrus fruits?
  4. Does your local supply of citrus fruits come from California or Florida?
  5. Consult a local retailer or commission man and find where and from whom apples and berries are bought. How many middlemen handle such fruit after it leaves the farmer's hands?
  6. Ask your local dealer from whom he buys his citrus fruits. Find out, if you can, how many middlemen have handled them.
  7. Are the citrus fruits shipped in refrigerator cars?



centers. These men used their own judgment as to when and how to sell. It happened too frequently that the commission merchants sent false reports to the producer who sent them the fruit, that it was spoiled, or that market prices were low, and the producer had to accept the commission man's word, since he had no means of checking up these reports. Therefore the whole group of middlemen fell under suspicion.

#### PRODUCER LACKED MARKET INFORMATION.

The most fundamental difficulty, however, was that the producers had no means of knowing in what markets there was a scarcity and hence high prices, and where there was an oversupply.

He shipped his fruit without knowing what price it should bring in the market to which it was directed. Whatever information he received regarding the condition of his fruit and market prices was through the middlemen. Sometimes he even sold his fruit while still on the tree to agents of the commission men. In short, there was no proper effort to adjust demand to supply by either the middleman or the producer.

The producer never knew how big a crop could be grown profitably, because he had no way of forecasting what the total demand for his fruit might be. There was, moreover, no incentive for the middleman to increase the general demand for citrus fruits or to widen the market, for he had many other products to sell. And yet it was these middlemen—the wholesalers, jobbers, brokers, commission merchants, and retailers—who were responsible for selling the fruit, for seeing that the season's output was disposed of. This being the case, the producers had no way of learning how much fruit would be demanded. As a result, there would often be a total crop so large that the market was oversupplied, and all the fruit then had to be sold at a price that gave the producer no profit.

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1. How much variation in the price of oranges is there in your community during the season? How much with lemons? Grapefruit?
  2. How many different grades do you find in the case of oranges? Of grapefruit? Of lemons?
  3. Do you find that all local dealers sell the various grades at the same prices?
  4. Ask your local dealer what fixes the prices of citrus fruits.
  5. Do you find in the newspapers any quotations or market reports on the prices of fruits?
  6. How much waste is there in a box of oranges as a rule? Does the grower, merchant, or consumer suffer the loss?

## NO STANDARDS FOR GRADING AND PACKING FRUIT.

Among the producers there was no standard method of grading and packing the fruit. Each farmer did as he thought best. There was no organization to educate the growers in the best methods of cultivation, in the best ways to prune and spray the orchards, nor in the need for uniformity in grading and packing the fruit. The individual farmer also had to pay high freight charges, because he usually shipped only small lots.

## THE CALIFORNIA FRUIT GROWERS' EXCHANGE.

To meet all of these various difficulties, a movement was begun in the early nineties to organize the producers of citrus fruit into cooperative associations. It was the purpose of these associations to obtain uniform and good methods in growing and handling the fruit and to provide facilities for marketing it. Their aim was to cut out the middleman. This was to be accomplished by building up an organization of growers to do for themselves what the middlemen had been doing for them. The result was the California Fruit Growers' Exchange.

The California Fruit Growers' Exchange is composed of one central exchange, 17 district exchanges, and a large number of local producers' associations. The central exchange, on the one hand, represents the producers and on the other directs the business of selling. Through it the growers and sellers communicate. The seller receives their orders from the growers and are thus controlled by them. If one will think of a telephone exchange into which lead a great many wires and out of which lead a great many more, one will be able to see much more clearly the services of the central exchange.

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1. Do you think it necessary for citrus fruits to be as carefully wrapped as they are? Does the wrapping prevent freezing? Does it prevent bruising?

2. What is printed on the wrapping paper? What is the purpose of this printing?

3. Can you think of any way in which the trade-mark on the wrapping paper might prove misleading?

4. Do you think too careful wrapping is wasteful and extravagant? Who pays the cost?

5. Are citrus fruits more carefully packed and wrapped than other fruits which your local merchant sells? Is there less waste?

6. How much does a box of oranges weigh? Is it more or less than a bushel?

In charge of the central exchange is a general manager elected by a board of 17 directors. Each director represents one of the 17 district exchanges scattered through orange-growing regions. Each district exchange, in its turn, is made up of representatives from the local growers' associations. There are 115 of these local or community associations containing from 40 to 200 members each. There are now 8,000 producers who are members of the local associations.

Since the growers elect the directors of the district exchange by sending one director from each local association, and the district exchanges elect directors of the central exchange, who choose the manager, it is clear that the growers control the entire organization. Besides, each organization—local, district, and central—is a nonprofit corporation. They exist merely to transact business for the growers and do not require a separate profit, which would add to the price of the fruit. They receive only expenses and the chances for profit or loss go back to the growers.

#### THE SELLING ORGANIZATION.

The sales organization by means of which the growers are able to send their fruit to market and to sell it, is, of course, under the direction of the central exchange. There are two general divisions, one for marketing oranges and another for lemons. Each of these is in charge of a sales manager. The whole country has been divided into six territorial divisions, each of which is looked after by a sales manager. The territorial divisions are further subdivided into districts in the charge of managers. The district managers are located in the principal cities throughout the country. This cooperative selling organization stops with them, since they sell to brokers and jobbers in those trade centers. From this point on the fruit passes into the regular channels of trade, reach-

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1. If fruit is grown in your community, find out to whom the grower sells it.

2. If sold to local merchants, is any such fruit shipped out of town? If so, to what destination?

3. If sold to a local dealer, where does the dealer dispose of the fruit? Does he sell to another dealer or directly to consumers?

4. Find out how many middlemen handle this fruit before it reaches the consumer in the city.

5. Do the growers rely upon the dealers for all their information as to prices?

6. Do any of the fruit growers in your community ship their fruit directly to the larger cities? If so, to whom is it consigned?

ing the consumer through retail stores, fruit stores, fruit stands, or street venders.

From this survey of the sales organization it is seen that the control is centralized in the central exchange. Each sales manager is responsible to his superior until the central exchange is reached. Thus the manager of the central exchange controls all sales managers, but he is in turn controlled by the growers, so that the control of the entire organization is in the growers' hands.

#### THE WORK OF THE VARIOUS DEPARTMENTS.

This control is made clear by a description of the duties and responsibilities of the various departments in this great cooperative organization. Let us begin with the local associations of growers.

It is the duty of a local association to build a packing house at a convenient spot along the railroad serving its particular community; to supervise the packing, grading, and loading of fruit; to assist the growers by securing laborers, by arranging for pruning and spraying, by education in the best horticultural methods.

The duty of the district exchange is to order cars and to see that they are in the right place when needed; "to keep a record of the carloads shipped by each local association and their destinations, to inform themselves through the central exchange of all phases of the citrus marketing business, to place the information before the associations, to receive returns for the fruit through the central exchange, and to return the proceeds to the association."

The central exchange has as its duty to furnish market information and marketing facilities to the district exchanges and associations. Through its organization of sales managers it keeps in daily touch with conditions in the markets all over the country. It sends to all the associations daily bulletins containing the latest market news. It also acts as legal representative

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1. Can you think of any disadvantages in the direct marketing of fruit by local growers?

2. In what quantities is it shipped? If shipped in larger quantities, how much freight or express would be saved?

3. Since the dealer can ship in large lots, is it not possible for him to make a profit for himself and at the same time pay the grower as much as the grower would receive if he did his own marketing, paying his own shipping bills?

4. Is direct marketing by the grower likely to mean a larger or smaller amount of spoiled fruit?

5. Could an independent grower ordinarily use refrigerator cars in making his shipments?

for the organization and carries on advertising to increase the demand for citrus fruits. Its expenses are paid by the district exchanges, the share of the expense met by the exchange depending upon the number of boxes of fruit shipped by it. These expenses are in turn passed on to the growers.

The whole organization is thoroughly democratic in its nature. Membership is voluntary. A grower may withdraw from an association at the end of the year, an association may withdraw from a district exchange, and the district exchange may withdraw from the central exchange. The grower exercises control over all matters. No sale of his fruit is ever made without his direct consent. At any transfer point along the railroad he may order the car of fruit diverted from its original destination to a better market, upon the basis of later news received by him through the sales organization. The sales manager is thus only the agent of the grower, can sell only at his command, and his interests are the same as the grower's interest; the higher the price the more prosperous they all are.

By means of the daily telegraphic reports which the central exchange receives from its sales managers it knows the price of oranges, lemons, and grapefruit in the important markets all over the country. This information, sent on to the growers through the daily bulletins, makes it possible for them to adjust the supply to suit conditions everywhere. There can be no glut in one market and at the same time a shortage at another. In addition, there can be no deception by dishonest dealers, for the producer now markets his fruit through his own representative, and he is kept fully informed of market prices and changes everywhere.

#### THE ONE WEAKNESS IN THE ORGANIZATION.

Though the organization has thus lessened the cost of distribution and equalized the supply of citrus fruits everywhere, it has

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1. Is the fruit in your community picked by hand?
  2. Are the trees sprayed? If so, at what time of the year?
  3. Send to an agricultural college for material on fruit raising. After studying the material compare local methods with those recommended by experts.
  4. In what ways do you think fruit production in your community might be improved?
  5. In what ways do you think the marketing of fruit in your community might be improved?
  6. Do you think that a cooperative marketing exchange would be advantageous in your community?

one point of weakness. Growers not only sell at will, but they also produce without regulation. The effect has been the planting of so many new orchards that within the next few years the supply of California oranges will be increased 50 per cent and the supply of lemons doubled. It is doubtful whether the demand will increase at an equal rate and whether this greatly enlarged output can be sold at a profit. Thus there is no adjustment of future supply to demand.

#### RESULTS OF THE FRUIT GROWERS' EXCHANGE.

The California Fruit Growers' Exchange is the great cooperative organization that has developed to meet the difficulties in the marketing of citrus fruits. For 22 years it has carried on its work with marked success, especially in the past decade. In 1916 it handled 67 per cent of the citrus-fruit crop of California. There are about 40 other cooperative associations and grower-shipper associations dealing in citrus fruit. Together these handle about 85 per cent of the entire crop.

This system of marketing has greatly reduced the cost of distributing citrus fruit, has brought about uniform and scientific methods of grading, and has developed varieties that ripen throughout the year. It has obtained lower freight rates through enabling growers to join together and ship a carload at a time. It has offered a better fruit to the consumer at a lower price than ever before. Thus the growers, while retaining their independence of will and action, gain all the advantages and economies of large-scale distribution. By means of centralization in a cooperative exchange, they can meet the buyers in the market on equal terms without losing a whit of their individuality and independence.

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LESSON B-27. GOOD ROADS.<sup>1</sup>

Wherever a community grows up there will be paths or roads or waterways which make it possible to carry goods back and forth and to set up neighborly relations. As the community gets larger and more prosperous, the lines of communication become better. There is no clearer indication of a strong community spirit than good roads or streets.

## MEANS OF TRANSPORTATION REFLECT COMMUNITY DEVELOPMENT.

Think of the difference between a well-paved city street and a muddy, unkept country road, and the relation of good roads to community life will be clearly brought to mind. The former gives evidence of the cooperative effort of many people who have united to make trade and personal travel easy. The latter gives equally clear evidence of community life which is undeveloped, either because the people in that district are few or because they are backward.

What is said about good roads could be repeated with regard to other means of transportation. Good railroads or good trolley lines are either the results of a demand for connections between existing communities or they soon lead to the springing up of settlements because of the ease of communication.

## THE MOVEMENT FOR GOOD ROADS.

The value of a good road to all who use it is beginning to be recognized to such an extent that there is at the present time a widespread movement to build roads in all parts of the country. State legislatures are petitioned to appropriate great sums of money for roads, and county and town boards are formed to take care of short local roads for which the State can not properly be asked to pay. Let us take up a case which will show how important good roads are for the development of a country.

## GOOD ROADS ECONOMICAL.

A progressive farmer in central Missouri discovered the importance of a road by the following reasoning. He noted that the road from his farm to the nearest railway shipping point, which is 4 miles away, was impassable to a wagon loaded with grain

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<sup>1</sup> This lesson was prepared by Clifford H. Moore, instructor in history, State University of Iowa. It emphasizes the fact that social relations are dependent on adequate means of transportation. There can be no organization of community life without roads and other avenues of trade and social intercourse.

during three months in the year. Over this road he must haul the 5,000 bushels of corn which his farm produces. As matters stand now, he must do his hauling when the road permits. This means that he has to get his corn harvested and hauled in a limited period in order to use the road when it is open. Since he must do his work in a limited time he has to hire for the short time more men and have more horses, and after the road becomes impassable he finds that the men and the horses can not be employed to advantage and not all of them can be turned off. It would be better for him if he could employ a few men and horses steadily and could be sure that he could do his hauling whenever he was ready. As it is he hires three men and has four teams of horses. He rushes the hauling through at the same time that he is doing the harvesting. One man averages 40 bushels of corn a day, husked and taken to market. If the farmer could distribute time and work better, two men beside himself could husk and "pen store" 180 bushels a day, leaving the hauling till later. The crop would be safely out of the field sooner than when four men work at both husking and hauling. Later the hauling could be done without interfering with harvesting or other important work. The farmer could get on with one team less and could give steady employment to his two men. The result would be that he would get better men at a better rate.

#### GOOD ROADS COST MORE BUT PAY IN THE END.

It is thoughtful consideration of this sort that has led many a farmer to become an advocate of good roads. To be sure, good roads mean higher taxes, but even from a purely financial point

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1. "The first highways of commerce were the seas." Find out from your history what early nations were especially noted for their commerce and indicate why their development took place in this direction.
  2. When people have gone into a new country, they have usually followed the course of streams. Explain why this should be so.
  3. Describe some of the different kinds of roads that you have encountered in your experience and explain why the conditions that you have seen should be good or bad.
  4. Why should the streets of a city be paved?
  5. Explain what are the advantages and disadvantages of a good railroad track as a means of economy in transportation. In this connection explain why modern railroads have spent a great deal of money establishing a uniform grade and eliminating curves in their tracks.
  6. It used to be the custom for each man to work out his road tax by improving the road in front of his own house. Why is this an unsatisfactory method of caring for a highway?

of view it pays the community to build good roads. Mr. Houston, the United States Secretary of Agriculture, has said that it costs 23 cents to carry a ton one mile on the average country road, while it would cost only 13 cents if the road were properly improved.

#### A ROAD IS A COMMUNITY ENTERPRISE.

A road can not be built by a single man; the community as a whole must unite in the enterprise, first, because it is the community as a whole which benefits, and, second, because in all large undertakings cooperation of many people is necessary. Indeed, road making is from every point of view an excellent example with which to show the meaning of community cooperation.

#### SOCIAL ADVANTAGES FROM A GOOD ROAD.

It is not alone in financial economy, however, that a good road benefits a community. A good road makes it possible for people to get their mail more regularly, to go to church and social meetings and school more regularly. Neighbors see more of each other and in this way all the advantages of living in close community relations are obtained. Where roads are poor the country family is cut off from all kinds of social opportunities. A few years ago the Rural Life Commission, which studied the conditions surrounding the life of farmers, laid great stress on the necessity of providing rural families with means of entertainment and social contact with neighbors. The report of the commission gives a number of cases of farmers' wives in backward regions who had become utterly discouraged and had even broken down in health because they had no relief from the routine of their lonely lives. Good roads mean easier trips to town and to other homes.

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1. Make a list of the different items of expense that enter into the production of a crop of grain.
  2. Indicate the points at which a farmer must be most careful in economizing in the cost of producing the crop.
  3. Why is it possible to get a better grade of work done when one employs workmen steadily for a long period of time?
  4. Why is it necessary to get the corn crop in as rapidly as possible in the autumn?
  5. The opening up of the grain fields of the Northwest is due to the building of railroads. Show how this statement carries out the same principle that is illustrated in the text.

## ADVANTAGES REFLECTED IN VALUE OF LAND.

That the advantages of good roads are very real is seen from the fact that the value of farm lands goes up with improvements in roads. A survey of the State of Ohio by the Department of Agriculture supplies definite evidence of the truth of this statement. In this survey 43 counties were shown to have more than 10 per cent of the roads improved and 16 counties to have less than 10 per cent. The average value of the land in the 43 counties with improved roads was \$65.79 per acre, whereas in the 16 counties without improvements the average value was \$45.50. In North Carolina 17 counties with more than 10 per cent of their roads improved averaged \$15.62 per acre, while the 74 counties with less than 10 per cent averaged \$10.57 per acre.

## NATIONAL SUPPORT FOR GOOD ROADS.

The question naturally arises as to the means by which better roads are to be obtained. Recently Congress passed a law designed to aid in solving this problem. Briefly, the law provides for the cooperation of the States and Federal Government in the construction of rural post roads. Appropriations by the Federal Government are limited to 50 per cent of the total cost, such appropriations to be apportioned according to population, area, and mileage of rural delivery and excellence of the routes. The national appropriation thus helps local communities and at the same time, by recognizing excellence as one of the reasons for appropriating money, stimulates the local community to vigorous efforts.

Local initiative has also been aroused in this campaign. There have been many reasons advanced for more vigorous efforts in

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1. Recreation is quite as important to the development of a community as industry. Explain this statement and describe some of the provisions made in the community in which you live for recreation.

2. What are the forms of recreation possible in a rural community as distinguished from an urban community?

3. How does the improvement of social conditions come to affect the price of land?

4. What are some of the other conditions that affect the price of land? In answering this question include railroad transportation or transportation by canal and also other advantages that come with the growth of the community.

5. In building railroads across the continent, companies have depended very largely on aid from the National Government. Why should this type of aid be given earlier than aid for the building of highways?

road building. One man wants a smooth road for his automobile; another has reasoned out the importance of a good road for the marketing of his crops. The merchant in the town comes to understand that good roads mean more trade. Whatever the motive of the individual, the importance of roads is coming to be recognized and people are bestirring themselves to secure them.

#### HOW MOUNT AYR, IOWA, ATTACKED THE PROBLEM.

There are various ways of getting a local community to take up the problem. A unique method was that adopted at Mount Ayr, Iowa. A banquet was arranged and all the farmers were induced to attend. At this banquet the president of the commercial club offered \$350 in cash prizes to the organization of farmers which accomplished most in improving the portion of the road leading from any given section of the country into the town. The final result was the formation of seven road clubs. Road tools sold at a premium. In one township it became necessary for the owners of a road grader to take off its wheels at night and lock them in a cave to prevent the grader from joining another road club.

Highways that had been but neglected by-paths were converted into good roads before the time for the final judging. Brains were combined with labor to get results. Men met at a convenient home in the evening and discussed methods for working the roads. One group copied the work of another, and as a result uniform methods of road building were worked out. The result was not only good roads for that part of the State, but the development of methods of road building which the Iowa highway commission adopted for the improvement of roads throughout the State.

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1. Associations are frequently organized to promote some public interest. Make a list of a number of these associations.

2. Farmers' associations are of great political importance in certain parts of the country. Why should a farmers' association have political influence?

3. Reference is made in the text to a highway commission. What is a commission and what is the source of its authority and power?

4. What other public officers are charged with responsibility for highways?

5. Who owns the highways?

6. When a waterway is used for commercial purposes who has authority over the boats on the waterway? Who is responsible for keeping the waterway in navigable condition?

7. When ships sail on the ocean under whose control are they?

8. Who has jurisdiction over a harbor and the boats in the harbor?

## INTELLIGENT ROAD BUILDING.

Skill in road building is required to enable a community to get what it needs with the least possible expenditure. A moment's consideration will make it clear that a road which is to be traversed day after day by heavy trucks traveling 30 miles an hour must be very differently constructed from a road which has to carry only comparatively light farm wagons drawn at a slow rate by horses. A road on a hillside will have to have a different construction from one which runs through the valley and is not so likely to be washed out by the rains. A road through a country where frosts are severe and frequent will present a different problem from a road in a part of the country where there is little frost.

There are other problems in road building. Where shall material be found? One case will illustrate both the wrong way of meeting this problem and the right way. Several miles of macadamized road were built by a certain community in which were many enthusiastic but wholly inexperienced men. The materials were brought from a distance at great expense. Within a very few years certain portions of the road were completely cut to pieces. In rebuilding the worn-out sections the services of an engineer were secured. He accomplished the reconstruction by the use of gravel from the vicinity at almost one-half the former cost per mile. If the community had only taken expert advice when they first built the road, they could have saved a great deal of money and would also have gained much in laying out all their plans, for road building is a complex art and requires the judgment of well-trained engineers.

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1. Why should a road have to have construction for vehicles that move at a high speed which is different from that which would be sufficient for vehicles that go slowly?
  2. What devices are used on hillside roads to prevent them from being washed out?
  3. How deep does the ground ordinarily freeze in winter?
  4. What relation has the depth of freezing to the way in which foundations of buildings and roads are laid?
  5. Would it be economical to put down a brick pavement along an ordinary country highway?
  6. What are some of the materials used in ordinary road construction in your own neighborhood?
  7. Look up the history of John Macadam and find out at the same time some of the reasons why the road which he devised has been so generally used.



## METHODS OF ROAD BUILDING.

It is not possible to describe here the different methods of road building. One method very commonly used is named after a Scotchman by the name of John Macadam, who constructed roads in the early part of the nineteenth century by using crushed stone. In this method the roadbed is cleared and graded and a layer of crushed stone 4 to 8 inches thick is spread evenly over the surface. A top layer of so-called "chat" or finely crushed stone is spread over the lower layers of coarse stone and the whole is rolled and tamped until a smooth solid surface is obtained.

In some cases it is found desirable to blanket the macadam with a coat of tar or asphalt. Where travel is heavy, concrete, cement, and bituminous concrete are used. On other sections and often on city streets where traffic is still heavier block pavement or brick pavement is used. This is also suitable for steep grades.

The intelligent use of these different methods will put the most expensive road where the wear is heaviest. There is no need of spending more in construction than the use of the road justifies.

If the traffic is light, the macadam is entirely adequate. The more expensive constructions should be used only where needed. The same kind of statement applies to bridges. If a bridge is to carry a load of 50 tons at the most, there is no reason for using girders which will carry 500 tons. The construction in all cases is economical only when it fits the demand which is to be made on it.

## THE HISTORY OF ROAD CONSTRUCTION.

The importance of good roads to a nation and community is fully illustrated in the history of earlier peoples who depended

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1. Find out something about the Roman military roads and the methods of constructing them.
  2. What effect have military roads had on the history of commerce?
  3. What great historical commercial centers grew up along the pathways of commerce?
  4. Would it be possible for a great city to exist if the only means of transportation were stage coaches or street cars drawn, as they used to be, by horses?
  5. It is said that after the war mail routes will be established with airplanes. What are the advantages of air routes over other routes of transportation?
  6. A large part of Germany's success on the Russian front is said to have been due to the ease with which she could move her troops, while the Russians had no adequate facilities. Explain why this is so.

on roads for all their commerce, as well as for the movements of their armies, and also in the events of the recent war.

Darius the Great built military roads and was able by means of these to hold his Empire together. Without good roads the magnificent Roman Empire would have been impossible. These roads were built in large part by the armies during periods of peace. Russia's collapse during the present war was in large measure due to inadequate transportation facilities. An abundance of grain in certain parts of that nation is no safeguard against inadequate provisions for the battle front or famine in other districts. Furthermore, the movement of troops on the eastern front has been very slow and clumsy, because of lack of wagon roads and railroads. The allies, seeing the importance of roads, have assigned large contingents of the armies in the Balkans and in France to road building.

#### GOOD ROADS AND THE GROWTH OF COMMUNITIES.

The need for good roads has not diminished as a result of the building of other means of transportation. On the contrary, as soon as any railroad or trolley line helps to develop a community the need for good roads is keenly felt, because the more people come together the more they become interdependent and the more they realize the necessity of lines of traffic and travel. A good road is at once the outcome of community life and a means of promoting new community activity. It is a result of the concentration of population and a promoter of further concentration and interdependence.

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## Chapter VIII.

### THE WORKER AND THE WAGE SYSTEM.

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This chapter deals with the human element in industry—the workers, and problems which concern them as such. The first lesson relates to the part of women in industry. The preparation of food and manufacture of clothing and the materials for it have always been considered “women’s work.” When the factories took over the greater part of that work, women followed it into the factories. The number of women workers has grown steadily, and since the great war began the increase has been very rapid. They must be protected by carefully drawn State laws and by thorough official supervision of their places of employment.

The present war is a war of industries no less than of armies, and the importance of man-labor power has been emphasized as never before. Labor organizations have suddenly attained a status that they might not have reached within another generation if normal conditions had continued. Lesson B-29 shows the purposes and functions of labor unions and describes their structure.

The human resources of the Nation are often wasted in part because of the difficulty of placing every man who wants a job and of filling every job that needs a man. It frequently happens that men are idle in one community when jobs are vacant in another. Public employment agencies have been established by many States and by the Federal Government to bring the men and the jobs together systematically and effectively. Lesson B-30 describes this work.

“Employment management,” substantially as described in Lesson B-31, has been practiced in some of the great industrial establishments for a number of years, but the war need of utilizing our labor power to the utmost has brought the plan conspicuously forward. It contains possibilities of great service in improving the lot of workmen and in increasing the output of individual industrial plants. It is, therefore, a matter of national importance, and appropriate governmental agencies are taking active steps to encourage its general adoption.

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#### LESSON B-28. WOMEN IN INDUSTRY.

By Miss EDITH ABBOTT, of the Chicago School of Civics and Philanthropy.

There were employed in the factories and work shops of the United States 1,772,095 women and girls when the Federal census was taken in 1910. These are our “women in industry.” But although they are collectively called “women,” about one-third are under 20 years of age and more than one-half are under 25 years of age. That is, the great majority are girls and very young women. This is an important point for it shows in part the need of protective legislation for women workers.

#### WOMEN’S WORK IN THE HOME AND FACTORY.

Many people think it a strange thing that nearly two million women should be employed in great industrial establishments, but when their actual tasks are known, their employment does not

seem at all strange. Most of these women work in the great textile factories as spinners or weavers; in the factories that make clothing; and in the factories like the canneries and the packing houses where much of our food is prepared. The preparation of food and clothing has always been considered "women's work." Nowadays, it is largely done in the factory instead of in the home.

#### THE FIRST AMERICAN FACTORY "HANDS."

Our women began to go into factory work in the early part of the nineteenth century, when the factory system was introduced into this country. At that time there were no women doctors or lawyers or teachers or clerks in stores and offices. A woman who wished to be independent and self-supporting could find no work outside her home until suddenly, with the introduction of machinery, she found she could become a factory operative, making the things she had always made. Her labor was greatly needed in the new factories. Agriculture was then our great industry and it was not easy to get capital and labor to build and run new factories. Our first factory hands were therefore girls and women from well-to-do and educated families. Just what they did can be best described by the stories of two or three of these girls.

#### THE STORY OF HANNAH BORDEN.

In what is now the great textile city of Fall River, Mass., some of the new machinery for spinning and weaving was already at work as early as 1817. The best weaver in this new mill town was Hannah Borden, the daughter of a large stockholder in Fall River's

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1. Take the last census of occupations and enumerate the occupations in which no men were employed.
  2. Enumerate those in which no women were employed.
  3. Are there any kinds of work usually done by women that could not be as well done by men?
  4. Make a list of any kinds of work usually done by men that you think could not be done by women.
  5. There is a popular tradition or prejudice that certain kinds of work are "men's work" and certain other kinds of work are "women's work." Are any of the occupations that you have put in your lists in answers to questions 1 and 2 occupations that could be perfectly well done either by men or women if there were not a popular prejudice against it?
  6. Make a list of things which in the colonial days were made in the home and are now made in the factory. Why are these things made in the factory? Is it because factory-made goods are of better quality? Is it because they are cheaper?

first cotton mill. Hannah Borden learned to weave on the hand loom when she was 8 years old, and at 14, when she went into the mill to work, she was an excellent weaver. After the power loom was introduced she ran two looms and wove 30 yards of cloth a day. She worked in a weaving room that was rough and unplastered and very cold, for there was only one stove to furnish heat. Part of the time she did "custom weaving," running only one loom, with extra care, and producing fine cloth.

Her day passed something like this: She arose at 4 in the morning and went to the mills taking her breakfast with her. By 5 o'clock she had her two looms at work, and by 7.30 she was ready to stop for breakfast. The breakfast time meant an hour off—from 7.30 to 8.30—but at noon she had only half an hour for lunch, and the looms were busy from that time until half past 7 at night. It was 8 o'clock before the Fall River mill girls of that day got home for supper, and they were said to be so weary that it was not uncommon for one of them to fall asleep over her evening meal.

#### THE STORY OF LUCY LARCOM.

During the first half of the nineteenth century New England was full of girls like Hannah Borden. When Dickens visited the young city of Lowell in 1842, he was amazed to find a "factory population" composed largely of educated young women who worked hard all day and spent their evenings writing poetry and attending lyceum lectures with such lecturers as Ralph Waldo Emerson and John Quincy Adams. These workers arranged for circulating libraries and even wrote and published a magazine called "The Lowell Offering."

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1. Do you think bread should be made in the home or bought from some company that makes thousands of loaves of bread every day? Is the bread maker usually a man or woman?

2. Do you think the family washing should be done in the home or done by a laundry company outside of the home? Does a man or a woman usually do the washing in a laundry?

3. Are there any modern occupations of women in the home that are likely to be factory occupations in the future?

4. What is a stockholder? What is a bondholder? What does a certificate of stock look like? What does a bond look like?

5. Would men prefer to be farmers rather than factory workers?

6. Why is it easier to get men to work in factories now than it was in the first half of the nineteenth century?

7. Why did the factory owner find it easier to get men employees in England than in America?

Among the famous contributors to this magazine was the gentle New England poet, Lucy Larcom, who began working in the Lowell mills when she was 11. With her sister, Emeline Larcom; her friend, Harriet Foley, later famous as a sculptor; and Harriet Hanson Robinson, who afterwards became a well-known Massachusetts suffrage leader, Lucy Larcom helped to make the Lowell factory town an interesting example of factory work and educational work going on together. Many of these girls were passionately eager for knowledge. They were saving money to go to Mount Holyoke Seminary or some other good New England academy that had been opened for women, and they were helping to send their brothers to Harvard College.

#### THE AMERICAN GIRLS LEAVE THE FACTORIES.

It is sometimes said that these splendid American girls left the mills when the immigrant girls began to come to the mill towns, first from Ireland and later from the French Canadian provinces. It is sometimes said that the American girls were "driven out" of the mills by the immigrants. But this is an error.

The Lucy Larcoms and Hannah Bordens were in the mills because the occupations requiring more education and intelligence were not open to women in those days. Gradually, as the common schools improved and more teachers were needed, these girls began to leave the mills to become teachers. At first they taught in the summer and then went back to work in the mills during the winter. Finally, during the Civil War when the mills were closed and when women were needed to take the places of men

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1. Read Lucy Larcom's poem "Hannah at the Window Binding Shoes" and write an account of the work of women in the shoe industry in Hannah's day and in Lynn and Brockton, Mass., at the present time.

2. What is a "pogrom?" How do you explain such a thing happening?

3. "Evening schools open 12 months in the year are needed in industrial communities." Why?

4. What has the evening school to do with the problems of "Americanization" and "assimilation"?

5. What are steerage tickets? Are many immigrants brought over through the help of friends and neighbors as happened in the case of Esther?

6. Find out into what parts of our country the French Canadians came. Why are they called French Canadians?

7. Find out what is meant by "sweated industries."

8. Do you think it is really true that women workers can not inspect the work places and make wise selections of places in which to work?



teachers who had enlisted in the great armies of the Union, the old heroic band of American student operatives was dispersed. Many of the girls went west to teach, and Lucy Larcom herself went out to what she called the "Looking Glass Prairie" of Illinois.

#### THE IMMIGRANT GIRL IN INDUSTRY.

What a contrast between the women employed in the first Lowell mills and the immigrant women in the great mill towns of to-day. Immigrant girls from Italian villages and from the other peasant districts of Europe have come into the great factories and into the already crowded tenements of the industrial cities. These young peasant girls are as eager and ambitious as were the New England girls of the earlier day, but many have come from countries where education is neither compulsory nor free. Although they are eager to learn to read and write, it is not often easy for them to go about it. Alone and bewildered in a strange city, not even knowing the language of the country, they can not always find their way to night schools. Furthermore, they are not always fortunate enough to work in cities where night schools are provided.

#### THE STORY OF ESTHER SIMANSKI.

Let us take, for example, the story of a girl from eastern Europe, whom we shall call Esther Simanski. Esther was a Jewish girl whose parents had been murdered in a Jewish "pogrom." She had fled to America with her sister and some other Jewish refugees from the terror-stricken city.

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1. What is meant by the prohibition of night work? Why is night work less desirable than day work?

2. An English commission decided that women could in many industries actually do more work in 8 hours a day than in 10 hours. How can this be possible? Is it true as a short-run proposition or as a long-run proposition?

3. "In industries where the machines are automatic, a greater output will be secured by working the hands 10 or even 12 hours a day. In industries where much depends upon the worker, an 8-hour day will get better results." Mention some industries of each class. Do you think the quotation states the matter correctly?

4. "Even if a great output can be secured by a 10-hour day, society should nevertheless insist on an 8-hour day." Give arguments on both sides.

5. How do you account for the fact that English laws protecting labor are more advanced than American laws?

She was too small to find work in a factory; so she sewed at home, finishing garments that her older sister brought home with her from the factory where she worked. The sister became ill and Esther took her place in the garment factory. She walked a long distance every morning and evening to save car fare, and she tried to work at home, sewing far into the night, to earn money to take care of herself and her sick sister and to pay back the neighbors who had paid for their steerage tickets. She wanted very much to go to school and learn "English reading and writing," but she was very tired when she got home in the evening and there was always washing, ironing, mending, and sewing to be done.

In an interesting book called "Making Both Ends Meet" many stories are told of the working girls of New York City, and a good many of these stories are the stories of Jewish girls like Esther. Sometimes these girls are wonderfully successful, working hard over their machines in the factories by day and going to school and working equally hard over their books at night, and eager to tell you what a wonderful country America is because it gives an education even to those who are very poor and friendless. But sometimes terrible misfortunes befall these hard-working ambitious girls. Perhaps you have heard, for example, of the great disaster known as the "Triangle fire" in New York City, where 145 employees, mostly women and girls, lost their lives.

#### THE STATE AND THE WORKING WOMAN.

These women workers can not inspect the places in which they work, and choose a work place that is safe and sanitary and protected from the danger of fire. They are usually in great need

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1. Why do women get lower wages than men even when they do the same work?

2. The House of Representatives has passed a bill submitting a constitutional amendment giving women the right to vote. Do you think working women will be better off if this amendment becomes a part of the Constitution of the United States?

3. Does the short working day have anything to do with the problem of "Americanizing" the immigrant?

4. Explain why it is to the advantage of the State that high wages should be paid. Explain how the employer as well as the worker is benefited by high wages.

5. Some people say that the "labor standards" which appear in our "protective codes" are there because it has been found that they promote efficiency. What is meant by "labor standards"? Do you agree with the statement?

of work and they must take the "jobs" that are vacant, no matter how unsafe the building may be. It is the duty of the State to protect these workers who are so helpless that they can not protect themselves. For nearly three-quarters of a century the English Government has been trying to protect its working women and has been building up a great protective industrial code. England was called for a long time "the workshop of the world" because of the greatness of her manufacturing industries. And the "workshop of the world" fortunately has set a high standard in the matter of rules to protect the women and girls in its great industries. Some of the most important of these regulations of the conditions under which women work are the following: (1) Prohibition of night work; (2) the short working-day; (3) the minimum wage. No woman in England may work more than 10 hours in one day and no woman may be employed at night work. In certain industries the law sets a minimum wage which the employer must pay. This last protection is a very important one. Low wages mean poor and insufficient food; and underfed working girls lose their vitality and health.

#### WHAT ABOUT THE UNITED STATES?

England has passed these laws and other laws for the protection of her working women. What about the United States? Here in America we have 48 different States and each State has its own separate code of labor laws. Some States have short hours, some have abolished night work, some have passed minimum wage laws, and some have very good laws preventing danger from fire

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1. What reasons can you give why the war will not cause the employment of women to increase as rapidly in the United States as it did in England?

2. The Chief of the Ordnance Department and the Quartermaster General issued a pamphlet called "General Orders No. 13," in which they told manufacturers what would be proper standards for women's work. Just how does it help to win the war to issue such a pamphlet?

3. The Women's Trade Union League has issued a pamphlet telling what they regard as good standards for women's work. Why should they issue such a pamphlet?

4. In the Council of National Defense at Washington there is a Committee on Women in Industry, and the Department of Labor is setting up a division called by the same name. What do you think such committees and divisions could do that would help in winning the war?

5. People who have studied the matter say that one large cause of labor "unrest" in England, in the first year of the war, was the breaking down of labor standards. Do you think this could have been a cause?

and other accidents. But other States do not have such laws and some States that have good laws on their statute books do not have them enforced, and they are not very useful in protecting the women and girl workers.

#### WOMEN IN WAR WORK.

The great war has caused a rapid increase in the number of women working in our industries. In England, where great numbers of the men were called to the colors, the increase has been very rapid indeed. In July, 1914, there were 3,345,000 women in industrial pursuits, and by November, 1917, there were 4,761,000. In the United States it is not likely that the number will increase so rapidly, but already women may be seen doing a great deal of work which was formerly done by men.

Even in England there has been some trouble in making proper provision for protecting these women workers, and it will be a more serious problem in the United States, for our laws and administrative machinery are not so good as those of England on these matters. We must remember that, even from the narrow point of view of making war materials rapidly, it is necessary to protect the women workers. A commission reporting on this subject says: "It is recognized that better working conditions produce increased efficiency, the lessening of mortality and morbidity of workers, and greater economy in manufacturing and producing." It is not surprising that the Council of National Defense early in the war passed a resolution that existing labor standards ought to be maintained. The leading officials of our Government who are engaged in war work, such as the President and the Secretaries of War, Navy, and Labor, are heartily supporting this policy.

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LESSON B-29. LABOR ORGANIZATIONS.<sup>1</sup>

Everybody knows that a good machine ought to be used with care. It ought to be kept well oiled, sheltered from bad weather, run under conditions which will not strain it, and promptly repaired in case it breaks. It pays to run machines this way. It seems strange that not all employers have yet learned that it is wise to "run" their "human machines"—the workers—in this same considerate fashion. It pays. Workers have powers of responding to good treatment which machines do not. In addition to paying, it is the right way to deal with human beings.

## THE STORY OF A GLOVE FACTORY.

In one of our western cities there was an owner and manager of a glove factory who had not learned that it paid to give his workers good treatment. The story is worth telling in some detail. To begin with, he left all matters of "hiring and firing," all questions of shop discipline, and many questions of rates of pay entirely in the hands of his foremen. These foremen had not been wisely selected. They treated the workers in an arbitrary fashion. They hired and promoted their own friends and relatives; fined or discharged on very trivial grounds people they did not like; and, in general, acted like petty despots in their little realms. It is fair to say that the manager did not know how his foremen were treating the workers, though of course he should have found out.

## PACEMAKERS AND UNFAIR FINES.

Other unpleasant things happened of which the manager did know. Wages in that factory were on the piece basis, which means that the worker is paid so much for every piece he makes. At first, piece rates in this glove factory were high enough to enable workers to make good wages each day without undue strain. The manager, however, hired some fast workers from other factories and brought them in to "set the pace" for his own workers. These fast workers could turn out many pieces per day. On the basis of the number of pieces these "speeders" could make, the piece rates were lowered, and the workers were told that by exerting themselves and turning out a large number of pieces each day, they could still make living wages.

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<sup>1</sup> The material for this paper was supplied by F. S. Deibler, professor of economics at Northwestern University. It shows, by a somewhat extreme case, some of the reasons why workers believe in unionism. It also sketches the broad outlines of the structure of labor organizations.

This did not seem to the workers fair. Few of them could make as many pieces as the "pace setters," and bad matters were made worse by an unreasonable system of fines for spoiled work and for tardiness. The workers did not object to fines in such cases, but they did object to unreasonable fines and to fines being imposed when they were not to blame.

It was the custom of the factory to charge the workers a small amount each week for the power necessary to run their machines and they were also charged for the needles they used. After a while they discovered that the manager charged so much for the power and for the needles that he made a profit on them. This was, of course, very irritating.

#### THE WORKERS SOUGHT A REMEDY.

It must not be supposed that the workers did not complain under this treatment. Person after person asked for higher wages, told of unjust treatment by the foremen, pointed out that the hours of work were excessive, and that the machinery was not properly safeguarded. The manager, however, had a false notion of "discipline" and promptly "fired" any worker who told him of these or other difficulties. The individual worker thus found out that he, acting by himself, was in no position to bargain with his employer. His employer could dispense with him much more easily and with much less loss than he, the worker, could dispense with the employer.

Matters finally reached the stage where the employees "walked out." This in itself showed how bad matters were, for these workers were not organized and did not "strike" at the suggestion

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1. Have you ever seen any machines which were not properly cared for? What happened to them? Did the owner of the machine lose because of this poor care? Did society lose? Did the machine lose?
  2. Have you ever seen a worker who was not properly cared for? Who was to blame? Did his employer lose because of this poor care? Did the worker lose? Did society lose?
  3. Find out what day wages are; what a bonus is; what profit sharing is.
  4. Do you know any foreman? If so, find out from him just what he does. Find out whether he thinks the foremen in this glove factory did right.
  5. Ask some worker whether he ever had a foreman like those of the glove factory; whether he ever had any experience with pace setters; whether he has ever been fined. See if he thinks he was unjustly treated in any of these cases.
  6. Do you think the workers had a right to be irritated when the manager made a profit from the needles? Why or why not?



of an "agitator." They had simply reached the point where they all felt that they could not work longer under such conditions. The final outcome was that a union was formed. Representatives of this union talked matters over with the employer, and he agreed to change his policies. The employees came back to work, and from this time on most of them were members of the union.

#### COLLECTIVE BARGAINING AND UNION BENEFITS.

The story of this glove factory is the story of an extreme case. Most plants are better managed. This extreme case is worth studying, however, for it shows why so many workers believe so firmly in their unions. They find that by organizing they are in a better position to bargain with the employer, and this means that they can secure better wages, better hours, and more favorable working conditions generally.

In addition to this so-called "collective bargaining" work of unions, most of them promote the welfare of their members in other ways, such as the payment of benefits when their members are sick, out of work, on strike, or disabled by old age. The amounts paid in benefits have been inadequate in many if not most cases, but the payment of these benefits has been very helpful and has developed a spirit of fraternity among working people.

#### APPRENTICESHIP RULES.

Most unions have apprenticeship rules. In some cases these rules have been adopted mainly for the purpose of training a boy entering an industry to become a skillful workman. It must be

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1. The manager of this glove factory once said that his workers were quite contented, for they made few complaints. Was the scarcity of complaints proof of contentment?

2. Draw up a definition of "collective bargaining." Find some one who has worked under an agreement of this kind. Ask him how often, if ever, the bargain is revised.

3. We hear of disputes between workers and employers. Are wages the only cause of such disputes? A prominent labor leader once said that wages were "not more than one-fifth of the story." What did he mean?

4. Some one has said that "the union is an impersonal device which the worker has developed to meet the impersonal conditions of modern industry." What does this mean?

5. What is meant by "standard of living"? What do you think of the argument of some unionists that limitation of apprentices is justifiable as a means of maintaining a high standard of living?

said, however, that some unions have drawn up apprenticeship rules with the main purpose of limiting the number of people entering that trade so as to be able to secure higher wages for those already in the trade. Such unions are not likely to be very friendly to vocational education in the public schools. They defend this policy by arguing that under modern machine methods it is not necessary for men to be very skillful and that the vital question now is how many workers an industry will support in accordance with the American standard of living. It seems to them fair to limit very closely the number who may enter a given trade so that those already in the trade may get good wages and thus have good living conditions.

#### THE OPEN SHOP AND THE CLOSED SHOP.

All of us have heard of the "open shop" and the "closed shop." The unions are glad to have the closed shop arrangement, which means that the employer will hire no one but members of the union. Such an arrangement is not necessarily harmful either to the employer or to the public. If the union concerned is one which readily admits new persons to the trade, there may be no monopoly but merely a better control of workers by responsible union officials and more carefully made bargains on wages, hours, and other working conditions. If, however, the union concerned restricts greatly the number who may join it, a harmful situation may arise. Employers who oppose the closed shop are likely to insist upon the so-called "open shop," which is a shop in which both union workers and nonunion workers may be employed.

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1. Find out some unions which exist in your community. Are they craft unions or industrial unions or labor unions?
  2. Name as many different "crafts" as you can in mining. What do you suppose is gained by having an industrial union in this case?
  3. Find out when the Knights of Labor were flourishing. Did this organization enter politics?
  4. Is the I. W. W. a labor organization? Does the American Federation of Labor approve of the I. W. W.?
  5. Find out what is meant by "sabotage." How can anyone believe in such a thing?
  6. What is the Woman's Trade-Union League? Is there good reason for such an organization?
  7. Is there a "city central" in your city? If so, find out what kind of questions are discussed at its meetings. When are its meetings held?
  8. Find out whether any national or international unions are represented in your community.

Sometimes, it must be admitted, open shops are open only in name. Some employers are able to close their shops entirely to union men. Such shops might perhaps better be called "closed nonunion" shops.

#### THE SETTLEMENT OF DISPUTES.

In those industries in which the employers have recognized the union, and the wage contract is the result of collective bargaining, there is usually definite provision for the settlement of disputes. These disputes may come up when the collective bargain is being made or they may arise afterwards. In either event they are likely to be settled by conciliation or by arbitration. Settlement by conciliation means that some "outside" person gets the representatives of the two sides together and they work out an agreement that is satisfactory to both parties. Settlement by arbitration means that the workers and the employer agree to accept the decision of an umpire. Each side then presents its case and the umpire makes his decision. If disputes can not be settled in either of these ways, the last resort is the "strike" or "lockout." A strike takes place when the workers collectively leave their work; a lockout when the employer discharges his employees. It then becomes a question which side can hold out longer. Both strikes and lockouts are very expensive methods of settling disputes.

The United States Department of Labor maintains a "conciliation service" whose function it is to try to bring about adjustments by conciliation whenever the department is asked to do so by the employer, by the worker, or by the public. This service has been, upon the whole, quite successful.

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1. Unionists sometimes get very angry at strike breakers. What are strike breakers? Why do unionists dislike them? What are "scabs"?
  2. "We do not really have open shops and closed shops. We have two kinds of closed shops and the open shop." What does this mean?
  3. Some people claim that unions do good work among our immigrant workers by educating them in American ways and habits of thinking. Do you think this is true?
  4. What things do unions do which may be classed as "fighting activities"? How would you describe their other activities?
  5. What reason can you think of why it might be wise to combine the locals of a given trade in a community?
  6. Look at a copy of "The American Federationist" to see what it deals with. Who is president of the American Federation of Labor?
  7. What are employers' associations? Are there any in your city?

## THE STRUCTURE OF LABOR ORGANIZATIONS.

Labor organizations are not all alike. If the organization takes in only workmen employed in some single kind of work, such as that of carpenters, plumbers, or painters, it is known as a "craft" union. Some organizations admit everyone in a whole industry, regardless of the kind of work he does, and these organizations are called "industrial" unions. The United Mine Workers' Union is an illustration of an industrial union. Sometimes an organization takes in all kinds of workers, no matter what craft or industry they work in, and it is then called a "labor" union. The Knights of Labor, which was at one time a strong body, was an organization of this sort. Of course, the expression "labor union" is also used in the general sense of "labor organization."

If you were to talk to a member of a union, you might hear him speak of his "shop meeting." When several members of the same union work in the same factory or shop, they are likely to come together occasionally to talk over matters affecting them in that shop. You would almost certainly hear him talk of his "local." By this term he means the organization to which he belongs in his locality. It is likely to include workers from many shops. In most cases locals have what is known as a charter from "national" or "international" unions, and the things which a local union may or may not do are likely to be set forth in a constitution which has been approved by the national or international. Some international unions allow only one local in a town or city. For example, Local No. 6 of the International Typographical Union is the only local in New York City and has a membership

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1. Find out, if possible, from some laborer and from some employer what each thinks of unions.
  2. If the opinions of the employer and the worker differ, try to find out from each the reasons for this difference.
  3. Find out from union men in your neighborhood whether their unions pay "benefits." If they do, what ones?
  4. Find out from some union men what apprenticeship rules his union has. See what he thinks about the statements made in this lesson concerning apprenticeship rules.
  5. What are the railway brotherhoods?
  6. What are "jurisdictional disputes"?
  7. Do the schools in your city have any courses which aim to train boys and girls to be better workers when they enter industry?
  8. German spies are spreading stories designed to get unions and employers to fighting each other. It is easy to see why. What can you do to help defeat these spies?

of 5,000 to 6,000. Most unions have several locals in the same town or city. If it becomes necessary to combine the locals of a given trade in a community, it is done by forming a "district council," which is made up of representatives of the locals in that vicinity.

National unions, city centrals, and the American federation unions first came into existence as locals. Workmen in a given trade or industry combined in a local to promote their welfare. Later, when locals in the same trade or industry had been formed in other localities, it seemed wise to unite them, and the national or international unions, such as the Brotherhood of Carpenters or the International Typographical Union, were developed for this purpose.

In a large number of cities the various unions send representatives to a central organization to discuss general labor matters of that city and to adopt satisfactory policies. Such an organization may be called by a variety of names, such as the federation of labor, the city central, the central labor union, or the allied trades and labor assembly. In like manner the State Federation of Labor is an organization of the unions within a State and deals with questions in which the union men and women of that State have a common interest, such as the passage of legislation affecting safety, sanitation, or hours of labor.

Finally, there is the American Federation of Labor, which is composed of representatives from the various national and international unions and from the State federations, the city centrals, and other bodies. The American Federation of Labor tries to promote the interests of laboring men and women throughout the whole country.

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1. Do you think there was any need of unions before the coming in of the factory system? Tell why you answer as you do.
  2. Do you think there is any need of unions to-day? Tell why you answer as you do.
  3. In what way could a national union aid in securing workers needed for war purposes?
  4. "A few unions and a few employers are more anxious to fight each other than they are to fight Germany." Does this show that their prejudices are great? What can the great mass of sensible unionists and employers do with these misguided people?
  5. Show why the leaders of unions are in a position which enables them to be of great service in winning the war.
  6. Are any disputes going on now in your community? Does the newspaper tell of any in other communities?

## VARYING JUDGMENTS ON UNIONS.

People differ very much in their opinion of labor organizations. Some think that these organizations serve no good purpose and are indeed dangerous. Others think that they are very helpful not only to the worker but to the community at large. The truth is that there are good unions and bad unions, good union policies and bad union policies. Like most other institutions, they are either good or bad according to the use which is made of them.

## UNIONS AND THE WAR.

Unions have played a very important part in the war and are likely to play a still more important part as the war goes on. In England they are very strong and England has also very many organizations of employers. Shortly after the war broke out labor and capital in England reached agreements on how they would conduct themselves during the war, and the unions have helped the Government in England in many ways.

Neither unions nor employers' associations are as strong in the United States as they are in England, but here also both are helping the Government. Their representatives are trying to work out a "National Labor Program" which will correspond to the English agreement spoken of above. The American Federation of Labor and its national and international unions are doing a great deal to show our workers the justice of the war in which we are engaged, to secure workers needed for war purposes, and to persuade men to work efficiently in war industries. The belief is general that these organizations will contribute a great deal to our final victory. It is a war for democracy. Organized labor must and will play its part.

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LESSON B-30. EMPLOYMENT AGENCIES.<sup>1</sup>

When people have products to sell, they usually take them to a market—it may be a country store, a city market place, or a grain elevator—feeling sure that they will find there persons willing to buy either for their own use or for sale to others. When a man has his own labor to sell, he seldom finds so convenient a market for it. Too often he can find a market only by the tiresome and wasteful method of going from factory to factory, or store to store, or office to office, asking for work. Even in fairly prosperous times when workers are in demand the man without a job does not know which employer needs his particular kind of services. He loses much time in going from place to place where he hopes to find work. Even when employers advertise for help in the "Want ad" columns of the newspaper the worker is not saved a great deal of time, for there are usually many applicants for each job, and most workers apply only to find that the place has been filled or that they can not do the work desired. In bad times a man out of work may spend many days or even weeks before he finds the market in which he can sell his labor.

## A TYPICAL EXPERIENCE.

A Chicago working girl wrote to one of the newspapers, describing her experience in trying to find work. Her experience is substantially that of many other persons seeking employment. She wrote:

For the past 10 days I have been going to the loop every day to look for work. I am there at 8 o'clock in the morning. I look for work until 11. From 11 to 12 is the lunch period in most big establishments, and it is useless to try to see anybody at that time. My lunch in a cafeteria gives me a rest of 15 or 20 minutes. Then I am back again on the sidewalk. It is a chase from building to building and a constant dodging of automobiles. The results have been zero.

This method of having numbers of men and women going from place to place looking for work is unsatisfactory to the employer also. The employer must sort out from a crowd of applicants the men who can do the kind of work he has to offer. Even then he can not be certain that the most satisfactory workers happened to be in the crowd which came to his factory gates. This waste of energy for both employer and worker has been a large cause of the

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<sup>1</sup> This lesson was prepared by M. B. Hammond, professor of economics, Ohio State University. A Nation-wide system of labor exchanges, federating those of the National, State, and municipal governments will render valuable service to our workers and to our industries both in times of war and in times of peace.

establishment of employment offices which undertake to bring together the worker seeking a job and the employer seeking a worker.

#### THE PRIVATE EMPLOYMENT AGENCY.

Most of the employment offices in this country have been established by private persons and are run for profit. These offices charge workers who apply a "registration fee," usually one or two dollars, and agree to try to find work for them. If work is found and the position is a permanent one, another charge may be made in the form of a considerable percentage of the first month's pay.

Some of these private employment offices are run honestly and do good work. This is especially true of teachers' agencies and of those agencies which enroll the higher grade of commercial and technical workers, such as stenographers and engineers. In many instances, however, it is clear that private employment offices, run for profit, are guilty of great abuses. Since the profits come mainly from fees paid by those hunting work there is a strong temptation for the persons who run the office to pretend that they have good positions open so that the worker will register and pay his fee. He is then likely to discover that "a mistake" has been made and that the place is no longer open or, if still open, that he does not have the desired qualifications; or he may be told of a job at some distant point to which he can not afford to go.

#### CLEARING HOUSE ARRANGEMENTS ARE DESIRABLE.

Another difficulty with the private employment agency method is that these agencies do not work together; do not cooperate. In our largest cities, the number of such agencies runs into the hundreds or even to a thousand. A man out of work must visit many of these agencies and pay fees in each one before he can be sure that there is no work of the kind he wishes which can be obtained through any of these offices.

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1. Name some goods which are produced for sale in the community in which you live. Where is the market for these goods?
  2. Are any goods sold by peddlers in your neighborhood? What disadvantages would there be if all goods were sold in this way?
  3. John Jones runs a factory for making shoes. Is this factory a market for labor?
  4. Find out what a produce exchange is; what a stock exchange is. Are these markets?
  5. When laborers are out of work in your community, how do they obtain work? Do you know whether they lose much time in getting work?

What the man out of work needs is one place where all employers needing help have made their wants known—not many places at each of which he may apply in the hope of getting work. What the employer needs is one place to which men out of work will go—not many places at each of which he must apply for workers. A central office in our large cities with many branches in different parts of the city and with these branches in constant and close touch with each other is the desirable system. An employer or a worker applying at any branch office may have his needs telephoned to all the other offices and those needs will quickly be filled.

#### PUBLIC EMPLOYMENT OFFICES.

It is this need of a centralized labor market which will bring together in one system all the “jobless men” and “menless jobs” of that community, which has led to the establishment of public employment offices. These offices are run by the Government, local, State, or Federal. Their expenses are paid out of public funds. They charge no fees whatever either to employers or to workers. They are not run for profit and have no motive to deceive their applicants, whether those applicants be employers or workers.

#### THE ENGLISH EMPLOYMENT EXCHANGES.

Public employment offices have existed in European cities for many years, but only recently have such offices been united into a national system. In 1909 Great Britain created a National System of Labor Exchanges, now called Employment Exchanges which soon included about 400 offices scattered throughout the United Kingdom. These offices have worked together in the same general way that the city system described above would work. Both employers and workers found them satisfactory, and they have been of great use during the war in enabling workers to be

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1. Sometimes one hears of “bread lines.” What are they? Would a good system of employment exchanges entirely prevent bread lines?
  2. Are there any private employment offices in the city in which you live? Do they charge fees for their services? If so, do they collect these fees from the worker or from the employer? Are additional charges made when an applicant gets a position?
  3. Some employers complain that private employment agencies tempt workers away from employers in order that the agency may find a new job for the worker. Do you think it probable that this is true?
  4. What disadvantages are there to the worker in the “Want ad” system? What disadvantages are there to the employer?

transferred quickly to munition plants and to other industries where the needs of war require prompt attention. Over 5,000 vacancies a day were filled by these offices in the United Kingdom toward the end of 1917. The English are so pleased with the plan that they are preparing to increase the number of offices to 2,000. This enlarged system will be efficient during the war and it will render very valuable service indeed during the period of reconstruction after the war.

#### PUBLIC EMPLOYMENT OFFICES IN THE UNITED STATES.

Public employment offices were first started in the United States in 1890 by the State of Ohio, which set up such offices in the five largest cities in the State. Other States and cities followed the example of Ohio. For many years these offices, while doing good work, did not give general satisfaction. People did not really understand how important such work was, and the legislatures did not appropriate enough money to do the work properly. Records were poorly kept and poorly trained people too frequently ran the offices.

In 1913-14 there were a great many unemployed in our large cities, and this caused us to realize how poorly organized our labor market was. It also drew attention to the success of the British system of labor exchanges. Many States and cities began to establish such offices and those which were already in existence were given more money to work with. The Department of Labor of the Federal Government saw the need of establishing them in various parts of the country and did so through its Immigration Service. All told, by the end of 1917 there were almost 200 such offices in the country, and they were doing a volume of work which compared favorably with that being done by the English exchanges. Meanwhile an Association of Public Employment Officials had been formed as a means of exchanging information on good methods and of developing interest in such work.

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1. Is it right to use public money to run employment agencies? Ought not either workers or employers pay the cost? Is it right to use public money to run schools? Why do we not run clothing stores with public money?

2. In what ways, if any, do public employment agencies benefit workers?

3. In what ways, if any, do they benefit employers?

4. In what ways, if any, do they benefit society in general?

5. Is it fair to private employment agencies to set up public agencies to compete with them in the same town?

**PUBLIC EMPLOYMENT OFFICES AS A WAR MEASURE.**

After the United States entered the world war the employment exchange movement of this country received a great impetus. Hundreds of thousands of men of military age had to be withdrawn from their usual work to engage in fighting. Hundreds of thousands of other men had to be moved from their former places of work to the districts where war materials were being made. Our Governments—Federal, State, and municipal—had to find some way to supply labor quickly where it was needed in order that a sufficient quantity of war materials could be made. They found the employment exchange system well adapted to their needs. Many municipalities and State Councils of Defense established or enlarged the State and local systems. The President, out of the “emergency fund” which Congress had provided him, gave the Secretary of Labor \$825,000 to spend between January 1 and July 1, 1918, in improving the national system. Congress had already provided \$250,000 for the same purpose.

**FURNISHING LABOR FOR BUILDING A CANTONMENT.**

Two illustrations will show how useful these public employment agencies have been. When the Government decided to establish a cantonment at Chillicothe, Ohio, known as Camp Sherman, and desired to hurry the construction of the huts and other necessary structures, the Quartermaster's Office of the War Department issued orders to all contractors at Camp Sherman to get all the extra laborers needed by them through the State-city public employment office at Chillicothe. This office is one of a chain of 22 public employment offices maintained jointly by the State of Ohio and the various cities in which they are located. All of them are in close cooperation with each other. Between June 29 and September 8, 1917, a period of a little over two months, these offices had furnished through the Chillicothe office 21,716

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1. Is there a public employment office in the city in which you live? How many persons work there?

2. What classes of workers in your community make most use of the public employment offices? What classes of employers use them most?

3. In a public employment office in one of our large cities the manager has a row of desks arranged where employers may sit to interview men. Is this better for the worker than sending him out to the plant? Is it better for the employer?

4. Do most people in your community approve of the public employment office? If not, why not?

workmen to the contractors working at the cantonment. These represented not only unskilled laborers, but also skilled men from nearly all the building trades, especially carpenters, electrical workers, and plumbers. On one Saturday morning an order came to the Chillicothe office that 3,000 men would be needed at the cantonment on the following Monday. The office at once got into communication with the other public employment offices in the State, and by Monday morning it had 3,750 men of the qualifications desired, ready to go to Camp Sherman as soon as summoned.

#### FURNISHING LABOR FOR BUILDING SHIPS.

Another example of the method in which the public employment offices are helping the country in war times is the way in which they have responded to the call for shipbuilders. Because large numbers of ships are required for sending our soldiers to France and for sending thousands of tons of munitions and food-stuffs to our soldiers and our allies, and because there has been a steady destruction of ships by German submarines, the need for ships has become the most urgent of all our needs. For this reason our Government is, in many shipyards on both coasts, carrying on the production of ships with feverish activity and is attracting to the shipyards great numbers of laborers of many varieties of skill. Here, too, it has made use of the public employment offices. The employment offices have furnished thousands of these workers and they have enrolled over 250,000 more, who are to remain at their present jobs until they are needed at the shipyards. This enrollment is in charge of the Public Service Reserve division of the Employment Service of the Department of Labor.

The "Reserve" has State directors in every State and has enrollment agents in practically every county in the country, and

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1. Find out whether any people in your community have enrolled with the Public Service Reserve for shipbuilding.

2. Another branch of the United States Employment Service is the Boys' Working Reserve. Find out whether any of the boys you know have enrolled with the Boys' Working Reserve. What kind of work do they expect these boys to do?

3. "A good system of employment exchanges is very important as a means of waging war successfully." Do you think this is true?

4. Find out what the United States Civil Service Commission is. Is it an employment agency?

5. What is an arsenal? Find out what arsenal is nearest you. How do they get workers for these arsenals?



subenrollment agents in almost every community. In a few weeks its agents in Massachusetts enrolled over 27,000 skilled workers willing to engage in service in the Government shipyards. The records of all these men on reserve have been classified according to their trades, and arrangements have been made so that, when they are called on, care can be taken that too many are not taken from any one employer or locality. Thus, when it is necessary to take men from other industries in order to meet the needs of the shipyards, this can be done in a way which will mean the least possible harm.

#### THE UNITED STATES EMPLOYMENT SERVICE.

It has become so clear that the public employment offices are a great help in securing the full use of the labor force of the country not only in war times but in the years after the war, when the men now in the armies will have to find their way back to various fields of work, that the Department of Labor of the Federal Government is making plans for a permanent employment service.

On January 6, 1918, the employment offices which had theretofore been conducted under the Immigration Bureau of the Department of Labor were reorganized under a new bureau called the United States Employment Service. Since then about 225 offices have been opened in the larger cities throughout the United States. There is at least one office in every State in the Union.

The purpose is to create under central control a system of public employment offices throughout the United States. In States where such employment offices are already maintained by States and cities, cooperative arrangements are made so that the local offices can work as part of a national system. Other States are encouraged to work with the Federal Government in opening offices wherever they can be of value. In each State the work is put under the direction of a Federal State director and an asso-

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1. Do you think there will be any real need of employment agencies in time of peace?
  2. At what times of the year are there the greatest demands for labor on the farm? What becomes of these farm laborers when they are no longer needed on the farm?
  3. In what ways could a nation-wide system of employment offices assist in this movement of laborers to and from the farms?
  4. Make as long a list as you can of the different ways in which you could go about finding a job.
  5. Make as long a list as you can of the different ways in which an employer could go about finding workers.

ciate State director, the associate director representing and being in control of the interests of the State. The country has been divided into 13 districts, each in charge of a district superintendent.

Whenever more men are needed in a locality than the local Employment Service office can supply, it promptly appeals to the State director for assistance from other offices in the State. If these can not meet the needs, the State director appeals to the district superintendent, who asks assistance from other States in his district, and if these are unable to get the men needed, other districts are called on. Similarly if there are more men unemployed in any community than can be placed in employment by the local office, these men can be made available anywhere in the State or country. Arrangements are made to transport men promptly. A "revolving transportation fund" of \$250,000 has been provided from which advances can be made by the Department of Labor to provide such transportation, and to collect it back either from the employer or the employee as may be arranged. In this way all the labor supply of the country can be promptly distributed to the points where it is needed most.

Immediate use will be made of this system, not only in supplying the employers who are working on Government contracts, but in meeting the needs for farm labor. The United States Employment Service is working under an agreement with the Department of Agriculture, which has a county agent appointed under an agreement with the respective States in each county in the country. The county agents keep in touch with the needs of the farmers, and call on the Employment Service to help supply the men. All third and fourth class postmasters have been made special agents of the United States Employment Service. The result will be that every man willing to work on the farms can be promptly put to work where he is most needed.

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**LESSON B-31. EMPLOYMENT MANAGEMENT.<sup>1</sup>**

Many times in these Lessons in Community and National Life we have seen that the position of the worker in the modern factory system is very different from the position he held in earlier stages of society. In some ways his position is not entirely satisfactory either to himself or to society. The preceding lessons on labor organizations and employment exchanges have shown us two out of the many ways in which efforts have been made to improve the position of our wage workers, and to make wise use of the labor power of the country. Workers join together in unions to gain higher wages, shorter hours, and better working conditions. Cities, States, and the Federal Government operate employment exchanges so that the workers may be directed to places where they can secure work and our factories can get readily the men they need to make ships and shells and Army blankets and the wares of peace.

Still another movement for improving working conditions and promoting the wise use of the labor power of the country comes from the industrial plants themselves and is led by progressive business managers. This movement is called "employment management."

**THE NEED OF EMPLOYMENT MANAGEMENT.**

Our modern factory system which brings together great numbers of men is after all quite new, and not many of us have yet learned how these large masses of men should be handled. In getting men for the jobs, it is usual to let the foreman "hire" at the factory gates and "fire" almost at will. Most of our plants have not even worked out good methods and just rates of wage payment. These also have too frequently been left to the judgment of the foremen. Often there is no definite policy of promoting men. It is not surprising that men working in such factories should feel that they are mere cogs in a machine and become careless and indifferent. Employment management is designed to improve such conditions.

**THE WORKER AND THE EMPLOYMENT DEPARTMENT.**

In one of our eastern industrial communities there lives a Mr. Seaton, a skilled mechanic who worked for years in a plant of the

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<sup>1</sup> This lesson was prepared by Miss Ruth Reticker, of the School of Commerce and Administration of the University of Chicago. Employment management contains possibilities of great service to both workers and employers. For the nation it contains the possibility of providing, in individual industrial plants, the local machinery which would enable us to carry out effectively a national labor policy.

kind just described. One day he hears that the Summit Manufacturing Co., let us call it, has a different way of treating its men. What he hears sounds so attractive that he applies for work.

He goes to an office which has a sign "Employment department" on the door. First of all he writes down on a blank form the important facts about his home and his family, his training, his former positions and employers, and his personal habits. He is then interviewed by an employment clerk, who questions him about the work he wants and his attitude toward work, and explains the ideals and rules of the shop. The clerk describes the positions which are to be filled, what they pay, and what they will lead to. Meanwhile, he is deciding whether this man can do the work of a certain position soon to be created, and whether he is honest, industrious, and alert—in short, whether he will be a desirable workman. Perhaps he checks up his own impression by writing or telephoning to one of Mr. Seaton's previous employers. He concludes that he will offer him the position.

When the position is ready, Mr. Seaton is asked to report to the company physician. The doctor examines him to make certain that he is physically able to do the work, and that he will not bring into the shop any contagious diseases which would harm other workers.

#### THE WORKER IS INTRODUCED TO HIS WORK.

Mr. Seaton is hired. The employment clerk assigns him a locker and takes him through the plant, pointing out particularly the lunchroom, the showers, the men's club, and the night school, which are part of the company's plan to make its employees glad to work there. Then he gives him a printed booklet of

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1. Make a list of the ways in which the position of the worker in the modern factory system differs from the worker's position in earlier stages of society.

2. What is a foreman? Does he train men? Does he fix their rates of pay? Does he hire men? Does he inspect the quality of the work? Does he determine how the work should be done? Is it likely that one man would be wise enough to do all these things well?

3. Assume that you are about to start working in a factory. Make a list of the qualities which would make the position seem desirable to you.

4. Suppose your great grandfather was a manufacturer of cloth or shoes. Would he have needed an employment department to select his helpers? What is it about our present-day organization of cloth making and shoemaking which makes employment departments and employment management necessary?

information for employees and introduces him to the foreman, and to the other workers in that division of the shop. He also explains the company's system of instruction cards which are given the workmen with each task, and the methods used to keep the machinery and tools in order. Already Mr. Seaton feels more "at home" than he has ever felt in his former jobs.

Since Mr. Seaton has had good experience in operating a machine similar to the one to which he is assigned, it is decided that he can begin work without any period of training. For a machine on which he was not experienced, Mr. Seaton would have received special instruction from a special teacher. For some positions in the shop he would have joined a special training class.

#### THE EMPLOYMENT DEPARTMENT COOPERATES WITH THE WORKER.

Mr. Seaton goes to work. The employment department puts him on the pay roll. In some concerns that would be the last he would see of the employment department, for some employment departments are employing departments and nothing more. The Summit Manufacturing Co. realizes that it will do little good to select superior workmen if they do not keep in touch with them after they are hired.

First of all, the employment department watches to see if the newcomer is really fitted for the position to which he has been assigned. His foreman keeps records of the quantity and quality of his output, and reports to the employment department his impression of the new man's attitude. If the new workman does not come up to the standard set, the employment clerk will talk with him to find the difficulty. Perhaps he needs a little special training. Perhaps he has not caught the spirit of the place. Perhaps he should be transferred to another department where the work would be more to his liking.

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1. The lesson tells of a system of instruction cards used by the Summit Manufacturing Co. What are instruction cards?

2. Employment departments keep various records concerning the workmen. Is the keeping of such records fair to the workmen?

3. Is it fair to the workman to have physical examinations? Might not a general system of physical examinations result in making it difficult for some worker to find a position?

4. Find out what an apprentice is. Do we have apprentices to-day? In what trades?

5. What is a corporation school? What is vocational education? A continuation school?

6. What is psychology? Can psychology help in the selection of workmen?

- It happens that the records show that our Mr. Seaton is doing well in his position. The employment department continues to watch his record, for it is the basis of wage increases and of promotion to better positions.

#### **EMPLOYMENT MANAGEMENT INVOLVES GOOD WORKING CONDITIONS.**

The employment department policy touches Mr. Seaton in many other ways. Safety devices are provided to protect him against the rapidly moving belts and shafts. If he is injured, in spite of these precautions, or if he falls ill, first-aid medical care is provided at the factory, and the factory physician and nurse follow him to his home. If he can not work for a time, "workmen's compensation" in case of accident, or health insurance in case of sickness, is paid him. If he has a grievance against his foreman or a fellow worker, or is dissatisfied with a rule or a tool, a shop committee on which the workers are represented will hear his complaint and adjust it fairly. All of these are part of an enlightened labor policy which is now carried out by our more progressive factories and stores. Whether or not they are carried out under the direction of the employment department, or by a medical department, or by so-called welfare departments, they are all involved in employment management. For employment management means the development and wise utilization of the human resources of the plant.

#### **EMPLOYMENT MANAGEMENT IS PROFITABLE FOR THE EMPLOYER.**

It is no secret that the Summit Manufacturing Plant and other plants follow this policy of employment management because it pays. Progressive business managers have come to see that if

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1. The lesson speaks of an "enlightened labor policy." What does this mean?
  2. It is argued that providing medical care or other welfare measures for employees is selfish because it redounds directly or indirectly to the benefit of the employer. Do you believe this is true? If so, is it unfortunate?
  3. What is meant by calling the employer's concern in the health, housing, recreation, etc., of his workmen "paternalism?" Does that mean that it is undesirable?
  4. Why should the business manager be concerned with the kind of houses his workmen live in? With the way they spend their hours outside of the factory?
  5. What do you understand by welfare work? What welfare work is done among the employees of factories in your community?



workmen do jobs for which they have not the strength or the eyesight or the training, if proper light and ventilation are not provided, if hours and wages are not satisfactory, if foremen are not considerate of the men under them, the workmen will leave and go to other positions, or will do such poor work that they have to be discharged.

The changing of the personnel of the working force is called the "turnover" of labor. Within the past few years many employers, individually and in the National Association of Corporation Schools and in Associations of Employment Managers, have been studying the labor turnover. They have found that changes of the labor force are very costly because of goods and machinery spoiled by inexperienced workmen, and because of interruptions to the other workmen. Some concerns have found that it costs them \$50 or even more to break in a new workman. It would be cheaper to hold and develop one of the workmen already employed. Of course, some new men must be hired in every business, for such reasons as that men die or are unavoidably ill, or leave town. The main part of the working force can be kept unchanged, however, if a concern adopts a policy of making the plant a desirable place to work.

#### THE EMPLOYEE AND THE COMMUNITY ARE BENEFITED.

This policy of employment management is obviously beneficial to the workers also. In fact, employment management is often mentioned as illustrating the fact that the interests of the employers and of the workers are identical. If we refer to the story of the Summit Manufacturing Co., we may see an example of this. It is profitable for the company to fill the factory with

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1. To break in a new machine worker in a factory costs on the average \$50, but to break in a new motor man or conductor on a street car cost \$200 to \$400. Can you give any reasons why the street railway employee should cost so much? Who pays this cost of breaking in new employees?

2. Make a list of occupations in which you think it would cost relatively little to break in a new man. Make a list of occupations in which it would cost much.

3. Find out what accounting is; what cost accounting is. Can you see any ways in which the accountant cooperates with the employment manager?

4. Make a list of the reasons why men leave jobs. Make another list of the conditions which you think would reduce changes of the working force.

superior workmen like Mr. Seaton, and to furnish these workmen with the best machines and tools, train them in the best methods of using them, and provide working conditions and a scale of wages which will keep the men well, contented, and efficient. The large output the men make saves the company money it would otherwise have to spend for more space, more machinery, more workmen, and more overseers. At the same time, the higher-wage Seaton and his fellow workers earn, the plans for regular promotion, and the provisions for welfare in general, are benefits to the workers.

Employment management benefits the community also. When workers are healthy, contented, and efficient, they make a large quantity of the things which the community uses, and everyone lives better. Employment management not only tends to produce such workers, but it also tends to bring about good standards in the laws of the community with respect to workers. States and cities show that they are concerned for the welfare of the workers by passing such laws as those requiring fireproof factory buildings, safeguards for machinery, compensation for injuries, and reasonable hours of labor. State factory inspectors enforce these laws. Business houses which have employment management departments commonly provide for their workers all the safeguards that the law requires and more. Frequently they try experiments to secure better conditions. If their experiments work well laws are likely to be passed which will bring all business houses of that State up to the standards of these leaders.

#### THE GOVERNMENT IS PROMOTING EMPLOYMENT MANAGEMENT.

The great war in which we are engaged has emphasized the need of employment management. War has taken thousands of men

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1. Make a list of the products which you think our factories could stop making in war times. Make another list of the things which we must have in greater quantities than before. In which list would you put typewriters, spectacle frames, furniture, office furniture, victrolas, pleasure automobiles?

2. Explain why it benefits the management, the worker and society for each man to do the work for which he is best fitted.

3. What is the legal working day in your State? The legal working week? Is it the same for men as for women? Why should there be a difference?

4. What is a minimum wage? Does your State have any minimum wage laws? What is the reason for minimum wage laws?

5. Is there an association of employment managers in your city?

and will take more thousands from our factories and mines and railroads to drill in our Army camps and to go overseas for service. Meanwhile, these factories and mines and railroads must be kept going. Ships and guns and shells must be made in quantities unheard of before, and the supply of many things for home use, such as clothing, farm implements, and food, must be kept up. It is therefore important that the men and women left in industry should work under conditions where a large output of goods will result. Every workman should, as far as possible, be in the work for which he is best fitted and should have proper working conditions. The Government is promoting employment management as one means of selecting and training workers, safeguarding conditions, and preventing unnecessary labor turnover. It is highly important that this work be done, for workers are moving from position to position at such a rate that labor turnovers of 1,600 or even 2,000 per cent are not unusual, although in normal times the average turnover is about 100 per cent.

The Ordnance Department, whose duty it is to supply for our Army guns, ammunition, saddles, cooking utensils, etc.; the Shipping Board, whose duty it is to build ships to carry our soldiers and our war materials to France; the Navy Department, which must build and operate our Navy, and other so-called production departments of Government are using employment managers more and more. When they hear of a plant engaged in making war materials which had bad working conditions, or a heavy turnover, they send an employment manager to that plant to give advice and to aid in installing a better system. Unfortunately, there is not a large number of men in the country who are competent to act as

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1. Are the working conditions in your community better or worse than they were a year ago when war was declared? Are they better or worse than they were 10 years ago? See if you can find the reasons for the conditions which exist.

2. What are the advantages to business managers of night work? What are the disadvantages to the workers? Are they disadvantages which affect society in general?

3. Mention all the things you can think of that a considerate management should provide for employees who work at night.

4. Is it "paternalism" for the Government to promote employment management? Have we always thought it the function of our Government to make such provisions for our industrial activity?

5. Can you think of any ways in which this attention to employment management will be useful after the war? Will there be need of employment management when the soldiers return to the factories?

employment managers. The Storage Committee of the Council of National Defense has accordingly made arrangements with several of our colleges for special courses to be given to train men to take charge of this work. These men will be in great demand both by the Government and by private businesses.

#### EMPLOYMENT MANAGEMENT AND THE DEPARTMENT OF LABOR.

It is expected that this work of training and supplying employment managers will finally be taken over by the Department of Labor, which will work with our business plants all over the country to prevent waste of our labor resources.

The Department of Labor can help a great deal in winning the war by such a service. An office can be organized in Washington to collect information concerning the best methods used by any plant either in this country or abroad, and this information can then be given to other business houses. Bulletins can be printed which will show how costly the lack of employment management and high labor turnover are to businesses and how wasteful they are of our national labor power. Other bulletins can show how these costs and wastes can be remedied. Still other bulletins can describe successful methods of selecting workers, conducting physical examinations, and providing training classes for new workers. Traveling agents from the Department of Labor can carry to business men advice concerning their problems and can assist them in installing the plans proposed. This would be a great cooperative circle, for the Government would be helping the industries of the Nation to help themselves, and thus help the Government.

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